A STUDY OF HERBAL AND HOME REMEDIES PREVALENT IN URBAN, RURAL AND TRIBAL CHHATTISGARH

A Ph.D. Thesis

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Place: Raipur **Shailbala Jais**

Date:

DECLARATION BY THE CANDIDATE

I hereby declare that the thesis entitled "**A STUDY OF HERBAL AND HOME REMEDIES PREVALENT IN URBAN, RURAL AND TRIBAL CHHATTISGARH"** is my own work conducted under the supervision of **Dr. Aruna Palta** (supervisor), Principal at Dr. Radha Bai Govt. Naveen Girls College, Raipur approved by Research Committee. and that, to the best of my knowledge and belief, it contains no material previously published or written by other person, no material which to substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning except where due acknowledgement has been made in the text.

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This is to certify that the work entitled **"A Study of Herbal and Home Remedies Prevalent in Urban, Rural and Tribal Chhattisgarh"** is a piece of research work done by Mrs. Shailbala Jais under my guidance and supervision for the degree of doctor of Philosophy in Home Science at Govt. D.B.P.G. Autonomous Girls College, Raipur (C.G.) India

That the candidate has put in attendance of more than 200 days with me

To the best of my knowledge and belief the thesis:

1. Embodies the work of the candidate herself;
2. Has duly been completed;
3. Fulfils the requirement of the ordinance relating to the Ph.D. Degree of the university; and
4. Is up to the standard both in respect of content and language for being referred to the examiner;

Forwarded

Signature of Supervisor **Signature of Head / Principal**


Dedicated to
the sacred memories of
my mother

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GLOSSARY-

- **Adaptogen-**An agent that supports the body's ability to accommodate varying physical and emotional stress.
- **Alterative-** An agent with ability to restore normal body function from an initial unhealthy stress.
- **Astringent-** An agent normally rich in tannin that can precipate protein resulting in contraction of tissues.
- **Bitter-** An agent that aids and support the digestive process by promoting salivation and gastric secretion.
- **Carminative-** A primary digestive agent that support and soothes the digestive system, relieving gas, spasm and distention.
- **Churn -** Fine powdered herbs, used as medicine, taken with water or food.
- **Decoction** – Crushed herbs boiled in water till half of its initial volume.
- **Demulcen**t- A mucilagenous agent that soothes irritated tissues.
- **Emmenagogue**- An agent that stimulate the menstrual flow.
- **Ethnographic interviews**: These types of interviews are usually purposeful, employing open ended items so that the subjects' reality and perceptions, can be documented, understood, and interpreted.
- **Ethnographic Process**: Ethnographic research is a labor and time intensive, extensive field work in a natural setting. Usually the general research questions are identified. Once entry is gained and trust is established, the research

questions are continually refined becoming more focused.

- **Ethnographic Purpose** – Gietz and LeCompre (1984) describe ethnography as "an analytical description of social scenes and groups that recreate for the reader and shared beliefs, practices, artifacts, folk knowledge, and behaviors of the people. "
- **Febrifuge-** Fever lowering agent.
- **Galactagogue**- An agent that promotes lactation.
- **Mantra and Tantra-** A specific magico-religeous practice applied on the ill person to make him/her healthy.
- **Nervine-** An agent that affects the nervous system either by tonifying, sedating or by stimulating.
- **Participant observation**: Here the researchers may participate in the phenomenon under study to varying degree.
- **PMID-** Tool that can automatically generate Wikipedia citations from a Pub Med ID
- **PMID: PMCID, PMC:** These are the serial number given by the **British medical library**. It is used to open a e- journal, e-books and e-data base, directly by inserting the number in the search box of any of the browser/search engine. [Like Google, MSN etc.]
- **Purgative-** An agent with pronounced laxative effect.
- **Rejuvenative-** Renews the body, mind and spirit.
- **Tailam –** Herbs cooked in edible oil according to rules laid down for internal of external uses.
- **Vermifugue-** An agent that expels the intestinal worms.

Abstract-

A qualitative study *on the "Herbal and Home Remedies Prevalent in the Urban, Rural and Tribal Chhattisgarh" has been conducted by using an* ***Ethnographic Research designe*** *to explore the name and number of herbs/ herbal remedies used by the inhabitants of Chhattisgarh. By following* ***the purposive sampling*** *300 people were screened, out of which 100 people each from urban, rural and tribal part of Chhattisgarh were selected. Among the enrolled subjects 50%were females and 50% were males. An* ***in-depth interview*** *and* ***focal group discussion*** *was held with them to collect the informations about the herbal remedies used by them for the treatment of various ailments. An* ***open ended questionnaire*** *was used to collect the informations about the herbs used by them. The collected data was analyzed for the* ***average values****. Results indicate that* ***total 140 herbs*** *have been reported by the herbal users of the urban, rural and tribal areas.* ***Total 34 herbal medicinal dishes*** *were reported by these people, which were commonly prepared by them as a supplement to the main treatment. The highest prevalent herbs in this area are* ***Tulsi*** *(Ocimum sanctum),* ***Amla*** *(Zingiber officinale),* ***Gwarpatha*** *(Aloe barbadensis),* ***Erand****(Ricinus communis),* ***Apamarg*** *(Achyranthus aspera****),*** ***Lasun*** *(Allium sativum),* ***Pippali*** *(Piperlongum),* ***Nirgundi*** *(Vites negundo),* ***Ashwagandha*** *(Withania somnifera),* ***Guduchi*** ***(****Tinospora cordifolia),* ***Harjor*** *(Cissus quadrangularis),* ***Mahanimb*** *(Melia azedarach) and* ***Satawari*** *(Asparagus racemosus). The advantage of this study is to highlight the potential bilateral benefits and limitations in the use of herbal and home remedies by the people of Chhattisgarh. Findings of the above study show the increased use of traditional medicine among the natives of the Chhattisgarh. It increases the possibility of successful integration of traditional medicine into public health sector by the government and non government organization. Thus the development of herbal medicines at commercial level can be achieved by the integrated approach and proper utilization of rich traditional source of knowledge of the people of the state, for the welfare of mankind.*

Objectives-

1: To find out the herbal and home remedies prevalent in the **urban, rural and tribal** Chhattisgarh.

2: To find out the various **herbal dishes** commonly popular among the rural and tribal inhabitants of Chhattisgarh.

3: To study the **active principles** of the herbs.

Hypothesis-

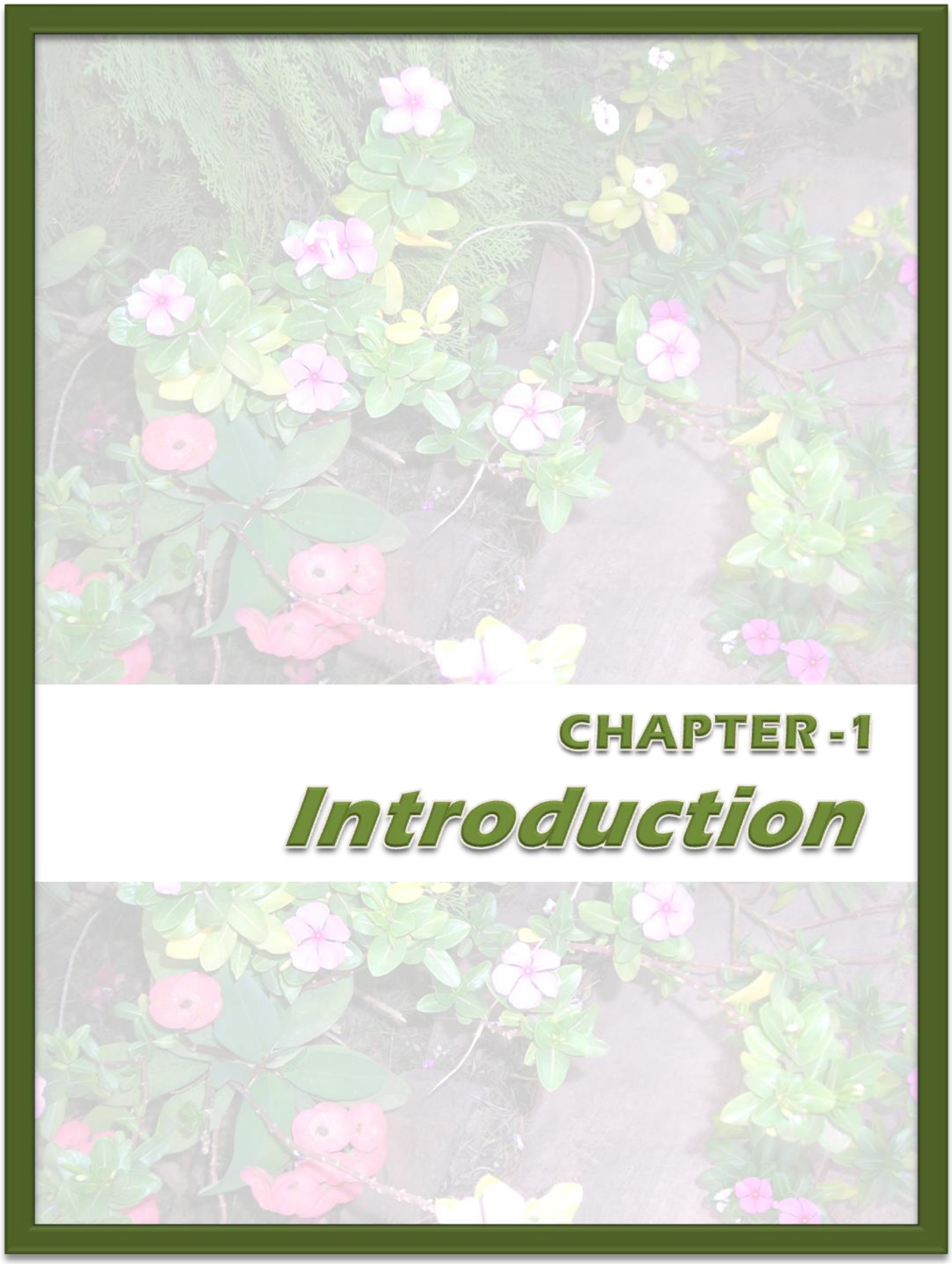
1. It has been hypothesized that inhabitants of Chhattisgarh; are well versed with the knowledge and use of herbal and home remedies prevalent in the state.
2. It has been hypothesized that herbs with therapeutic potentials are the part of their therapeutic regimen which is used to cure various ailments by the people of rural and tribal Chhattisgarh.

Limitations of the study-

1. Study was limited only to 300 subjects, 100 each from urban, rural and tribal part of the state.
2. Selection of tribal subjects was also made from the scattered tribal population; throughout the state.
3. Prevalence finding has been done only for some selected diseases. [Based on the information of the pilot study]
4. Authenticity of data is based only on the informations given by the users. Clinical trials and controlled studies are not a part of this study.
5. Only those medicinal herbs have been taken into account which is used at the domestic level. Therefore identification of the herb and

collection of specimen sample from the field area was not apart of this work.

6. Dose detection and duration of the treatment [posology] is not a part of this study. Therefore posology has not been quoted.
7. The current study headed "**Herbal** and **Home** Remedies Prevalent in the Urban, Rural and Tribal Chhattisgarh" has been divided into two parts one is certain **herbs** used in the treatment of various diseaseas and in the second is **Herbal dishes** [Home remedies] prepared for the treatment of commonly prevalent diseases.
8. In the interpretation of data **first five highly prevalent** herbs have been taken into consideration.
9. In the study of "***Herbal Dishes of Chhattisgarh,***" an expert advice has been taken to ensure the safety measures of the **dietary dishes**, so that standard and authentic recipes can be explored.
10. **Herbal dishes** of certain medicinally important herbs were recorded from the herbal users of the ***rural*** and ***tribal*** belt only.



CHAPTER -1

Introduction

CHAPTER I

INTRODUCTION

Herbal and home remedies are moving from fringe to mainstream use with great number of people seeking remedies and health approaches free from side effects caused by synthetic chemicals. It is well established that herbal medicines play a crucial role in health care for a large part of the population living in developing countries. Data available from WHO and ICMR indicates that traditional medicines are used by approximately 80% of the world's population. These are not only used for primary health care in rural areas in developing countries, but also in developed countries as well as where modern medicines are predominantly used[1].

Recently considerable attention has been paid to utilize eco-friendly and bio-friendly plant based products for the prevention and cure of different human diseases. Ancient literature also mentions herbal remedies for age related diseases namely memory loss, osteoporosis, diabetic wounds, etc. About 1500 plants with medicinal uses are mentioned in ancient texts and around 800 plants have been used in traditional medicine.

India has a rich traditional knowledge and heritage of herbal medicine. Our country is one of the 12 mega-biodiversity centres having over 45,000 plant species. In order to promote Indian Herbal Drugs, there is an urgent need to evaluate the therapeutic potentials of the drugs as per WHO guidelines. World health organization has also paid serious attention on documentation of knowledge from different communities and ethnic groups.

Traditional medicines are derived from medicinal **plants, minerals** and **organic matter. Plants,** in the traditional medicine had been used for long before recorded history. People of all continents have used hundreds to thousands of indigenous plants for treatment of various ailments since

historic times. The first generally accepted use of plant as well as healing agent was discovered in the ***Lascaux caves*** in France which have been radio-carbon-dated to 13,000-25,000 B.C. Medicinal herbs were found in the personal effect of an ***ice-man*** whose body was frozen in the ***Swiss Alps*** for more than 5,300 years. These herbs appear to have been used to treat the parasite found in his intestine. (2)

The use of herbs by prehistoric man, developed through trial and error method. As prehistoric man explored the world around him, he found out which herbs were nourishing, which could heal and which ones were dangerous to eat, and slowly an oral tradition of herbs and their uses developed.

A plant that is harmless to a particular animal may not be safe for human to ingest. A reasonable conjecture is that these discoveries were traditionally collected by the medicine-people of the indigenous tribes, who then proposed their views on safety information and cautions.

Many studies show that in tropical climates where pathogens are the most abundant, food recipes are highly spicy. Further, the spices having the most potent antimicrobial activities; tend to be selected in food making.

Use of plants as a source of medicine has been inherited and is an important component of health care system in **India.** In the Indian system of medicine, most practitioners formulate and dispense their own recipes; hence this requires proper documentation and research. In western world, also the use of herbal medicines is steadily growing. In the past few years there is a 40% increase of population who are using the herbs to treat medical illness.

In the 21st century, herbal medicine is increasingly supported by scientific and evidence based research. By keeping this point in the mind, WHO has designed a **traditional medicine strategy** in 2002, to gather,

document and disseminate general and evidence based information on indigenous, complementary and alternative medicines and therapies.[3]

According to WHO, **Traditional Medicine-** is the sum total of the knowledge, skills and practices; based on the theories, belief and experiences indigenous to different cultures, whether explicable or not, used in the maintenance of health as well as in the prevention, diagnosis, improvement or treatment of physical and mental illness.[4]

WHO has defined the ***Complementary/Alternative Medicine (CAM)*** in the following pattern- the term "complementary medicines" or "alternative medicines" are used interchangeably with traditional medicine in some countries. They refer to a broad set of health care practices that are not part of that country's own tradition and are not integrated into the dominant health care system.[5]

WHO also defined herbal medicines as herbs, herbal materials, herbal preparations and finished herbal products that contain an active ingredient, parts of plants or other plant materials or its combination.

According to European Union definitions, Herbal medicinal products are medicinal products containing an active ingredients exclusively plant material or vegetable drug.[6]

1.1: Classification of Herbal Medicines - For practical purposes, herbal medicines can be classified into four categories based on their origin, evolution and the forms of current uses. These categories have sufficient distinguishing features for the ways in which safety, efficacy and quality can be determined and improved. ,

Category 1: Indigenous herbal medicines- This category of herbal medicines are historically used in a local community and region and are very

well known through long usage by the local population in terms of their composition, treatment and dosage. Detailed information on this category of traditional medicines, which also includes folk-medicines may or may not be available. It can be used freely by the local community or in the local region. However, if the medicines in this category enter the market or go beyond the local community or region in the country, they have to meet the requirements of safety and efficacy laid down in the national regulations for herbal medicines.

Category 2: **Herbal medicines in the system-** Medicines of this category have been used since long time and are documented with their special theories and concepts, and accepted by the countries. For example, Ayurveda, Unani and Siddha will fall into this category of traditional medicine.

Category 3: Modified herbal medicines- These are herbal medicines as described above in category 1 and 2, except that they have been modified in some way, that is either in shape or form including dose, dosage form, mode of administration, herbal medicinal ingredients, method of preparation and medical indication. They have to meet the national regulatory requirements of safety and efficacy of herbal medicines.

Category 4: **Imported products with a herbal medicine base**- This category covers all the imported herbal medicines including raw materials and products. Imported herbal medicines must be registered and marketed in the countries of origin. The safety and efficacy have to be submitted to the national authority of the importing country and these needs to meet the requirements of safety and efficacy of regulation of herbal medicines in the recipient country.[(7)]

1.2: Herbs in the History- In the written record, the study of herbs date back over 5,000 years to the **Sumerians**, who described well-established use of such

plants as *laurel*, *caraway* and *thyme*. Ancient-Egyptians of 1000 BC. are known to have used *garlic, opium, castor oil, coriander, mint, indigo* and other herbs for medicine and the old-testament also mentions that herbs were used and cultivated, including *mandrake, vetch, caraway, wheat, barley and rye*.[8]

Indian Ayurveda medicine has been using herbs such as turmeric possibly as early as 1900 B.C. [9] many other herbs and minerals used in Ayurveda were later described by ancient Indian herbalist such as ***Charak*** and ***Shushruta*** during the first millennium B.C. The ***Shushruta Sahmita*** attributed to ***Shushruta*** in 6th century B. C. describes 700 medicinal plants, 64 preparations from mineral sources and 57 preparations based on animal sources [10]

The first Chinese herbal book was the **Shennong Bencao Jing**, is similar as the **Yaoxing Lun** [Treatise on the Nature of Medicinal Herb a book of 7th century].

The Ancient Egyptian Empire was an amazingly sophisticated civilization. In this period the scribes of Egypt kept meticulous records of all the dimensions which the great civilization accomplished, by 3500B.C. The Ancient Egyptians were organizing and recording an amazing array of medicinal practices. These included linking illness to effective treatments, complicated surgeries including that of the eye and prescriptions for herbal preparations.

Ebers Papyrus written in 1500BC has recorded over 1500 herbal combinations and their uses. The most complete medicinal document which were written at that time was **Ebers Papyrus** [1550 B.C.] and **Adwin Papyrus** [1600B.C.] [11]

According to the **Ebers papyrus** commonly used herbs are *sienna, thyme, juniper, frankincense, cumin, colocynth[all for digestion]; pomegranate root,*

henbane [for worms] as well as *flax, oak gall, pine-tar, manna, bayberry, ammi, alkanet, acanthus, aloe, caraway, cedar, coriander, cypenrus, elderberry, fennel, garlic, wild lettuce, nasturtium, onion, peppermint, papyrus, poppy-plant, saffron, sycamore, water melon, wheat and zizyphus-lotus.* [12]

Babylonian and **Syrian** medicine formed a bridge between **Egypt** and **Grece** and flourished between 1000 to 2000B.C. Much of the early Greek medical knowledge came over from Egypt. In Dioscorides work, **De Materia Medica** [55 A.D.] was framed. In this document a number of recopies are the same as listed in **Papyrus Ebers** and prescribed for the same ailments. Although Dioscorides was considered the absolute authority in **Materia Medica** for over 1600 years, it is important to note that knowledge of herbs and healing was handed down from one generation and culture to the next, and thus belongs to no one man, women or individual, but to humanity. As it is well known, the Greeks were highly skilled in medicine and **Materia Medica**. The following sources came down to us from the ancient period of about 500BC to 60 A.D.

1. **Hippocrates:** Usually considered an entire school of "**rational or scientific**" medicine, though the individual may also have lived. Hippocrates may also have been the first "**nature doctor**" in modern sense, for he utilized simple medicines such as *vinegar, honey, herbs and hydrotherapy* in healing. He emphasized prevention and healthful living. Many works survived and have been translated from the original Greek. The work that is of great interest to the herbalist today is "**Diorbachs"** [-**The Medicine of Hippocrates]** in German. All the 257 drugs mentioned in this work were listed and compared to modern **Pharmocognasy text** by Riddle [13]**.**

2. **Theophrastus (340B.C.):** He wrote on natural history and botany. His work "**Inquiry into Plants"** survives and is available in English language also. He described the plants, their uses, cultivation and other observations regarding their medicinal uses.[14]

3. **Pliny's (600 A.D.):** His work is the largest compilation on the plants from the Greek Period. Although Pliny was not very critical, he reported from the writings of other authors whose work does not exist now. So his work is a valuable guideline for the medicinal uses of plants in ancient medicine. Pliny lists more plants than "**Dioscorides"** or any of the other ancient writers.

4. **Krateus:** He was a Greek herbalist who is considered as the first person to produce an illustrated work on medicinal plants. Pliny speaks of his illustrated "**herba**l", which does not unfortunately survive. His influence is thought to be felt in the **De Materia Medica of Dioscorides**, as well as other later works on medicinal plants.

5. **Dioscorides:** He is the greatest and most influential Greek writer on **Materia Medica**. He was supposed to be a physician in Nero's army and thus traveled far and wide gathering, using and studying plants and recording the folk uses of many herbs as well. His earliest surviving manuscript is the "**Codex Vindobonensis"** from 512A.D.

1.3: Herbs of Middle Ages- The use of plants for medicine and other purposes changed in early medieval Europe. Many Greek and Roman writings on medicine and other subjects were preserved by hand copying of manuscripts in monasteries. The monasteries thus tended to become local cantres of medicinal knowledge, and their herb gardens provided the raw materials for simple treatment of common disorders. At the same time, folk medicine in the home and villages continued uninterrupted, supporting

numerous wandering and settled herbalists. Among them some were the "wise women" who prescribed herbal remedies often along with spells and enchantments. It was not until the late middle ages that women who were knowledgeable in herb lore became the targets of the witch hysteria. One of the most famous women in the herbal tradition was **Hilde Gard;** a twelfth century *Benedictine Nun*, who wrote a medical text called "**Causes and Cures**".

From the 9th century, in the medieval Islamic world; medical school known as **Bimaristan** began to appear, which was generally more advanced than medieval Europe at the time. The Arabs venerated Greco-Roman culture and learning, and translated tens to thousands of text into Arabic language for the further study. The Arab travelers had access to plant material from distant places such as China and India. Herbals, medical text and translations of the classics of antiquity filtered in from east and west. Muslim botanists and Muslim physicians significantly expanded on the earlier knowledge of **Materia Medica**, for example **Al-Dinawari** described more than 637 plant drugs in the 9th century. [15]**Ibn-al-Baitar** described more than 1,400 different plants, foods and drugs, over 300 of which were his own original discoveries, in the 13th century. [16]

The experimental scientific method was introduced into the field of **Materia-Medica** in the 13th century by the Andalusian- Arab Botanist **Abu-al-Abbas** at Nabati, the teacher of Ibn-al-Baitar. He introduced empirical techniques in the testing, description and identification of numerous materia-medica, and he separated unverified reports from those supported by actual test and observations. This allowed the study of **Materia Medica** to evolve into the science of pharmacology. [17.] **Avicenna;** the cannon of medicine (1025) is considered the first pharmacopoeia. [18] And lists 800 tested drugs, plants

and animals [19]. Book two is devoted to a discussion of healing properties of herbs, including *nutmeg, senna, and sandalwood, cinnamon* and *rose water.* [20]

Baghdad was an important centre for Arab herbalism. **Al–Andalus** was the prominent herbalist worked between 800 and 1400. **Abilcasis** (936-1013) of Cordoba authored *The book of simples*, an important source for later European herbals, while **Ibn-al-Baitar** (1197) of Malaga authored the *Cocrpus of simples,* the complete herbal book which included 200 new healing herbs including *tamarind, aconite* and *nux vomica*. [21]

Alongside the university system, folk medicine continued to thrive. The continuing importance of herbs for the centuries following the Middle Ages is indicated by the hundreds of literatures of herbal medicine published after the invention of printing in fifteen century. Theophrastus **historia plantarum** was one of the first books to be printed.

1.4: Herbal Tradition of Modern Era- The fifteenth, sixteenth and seventeenth centuries were the great age of ***herbals***, many of the literature were available for the first time in English and other languages rather then Latin of Greek. The first *herbal* to be published in English was the enormous ***Grete Herball*** of 1526. The two best known herbals in English were ***"The Herball or General History of Plants"*** (1597) by *John Gerad* and ***"The English physician Enlarged"*** (1653) by *Nicholas Culpeper.* After the Gerad (1597) the following were important herbalists in different centuries. [22]

1.5: Role of Herbal Medicines in Modern Human Societies- Recent years have witnessed a renewed interest of plant as pharmaceuticals in the western world. This interest is channeled into the discovery of new biologically-active molecules by the pharmaceutical industry and into the adoption of crude extracts of plants for self medication by the general public. Ethno pharmacologic leads have resulted in the introduction of new single molecule

drugs. The use of herbs to treat diseases is almost universal among non industrialized societies [23].

A number of traditions came to dominate the practice of herbal medicine at the end of the 20th century. These are as follow-

- The herbal medicine system, based on **Greek** and **Roman s**ources.
- The **Siddha** and **Ayurvedic** medicine systems from various South Asian countries.
- **Chinese herbal** medicine.
- **Shamanic Herbalisim**.

Many of these pharmaceutical products are currently available in the market. But physicians of modern era have a long history of use of certain herbal remedies, including *opium, aspirin, digitalis* and *quinine.* The WHO estimates that 80% of the world's population presently uses herbal medicines for some aspect of primary health care. [24]

Pharmaceuticals are prohibitively expensive for most of the world's population. In comparison with the modern medicines, herbal medicines can be grown from seed or gathered from nature for little or no cost. Herbal remedies are a major component in all traditional medicine system, and are common element in Siddha, Ayurvedic, and Homeopathic, Naturopathic, Traditional Chinese and Native American medicine.In the 21st century Herbal medicines are increasingly supported by scientific and evidence based researches. There is also a growing interest of scientists and social reformers in alternative and complementary treatment. [25]

1.6: Biological Background of the Medicinal Herb- All plants produces chemical compounds as a part of their normal metabolic activities. These include primary metabolites such as sugars and fats, found in all plants, and secondary metabolites found in a smaller range of plants, some useful ones

found only in a particular genus or species. Many common weeds have medicinal properties. [26]

The functions of secondary metabolites are varied. Some secondary metabolites are even toxic. Since herbal and home remedies are such a diverse field but few generalizations can be applied universally. Herbal users tend to use extracts from parts of plants, such as the root or leaves but not isolate particular phytochemicals. Pharmaceutical medicine prefers single ingredients on the grounds that doses can be more easily quantified. Herbal users reject the notion of a single active ingredient. They argue that the different phytochemicals present in many herbs will interact to enhance the therapeutic effects of the herbs and dilute the toxicity. [27]

An herbalists or herbal remedy user does not necessarily need to be fully aware of details about the pharmacology of herbs; a basic understanding of it is more than enough. Herbs contain a huge variety of chemicals. Some of which are listed below:

1. **Plant acids-** There are many weak and aromatic acids; present in the plants. These acids have multi-dimensional effects like - sedatives, antiseptic, anti-pyretic and sometimes diuretic. **Citric acid** of *lemon* is the perfect example of weak acid, **benzoic acid** of *resins* is good example of aromatic acid.
2. **Alcohols-** Alcohols are found in variety of forms in the plant kingdom, they are mostly a compound of *volatile oils* or *sterols*. The most common examples are **geraniol** of *rose* and **menthol** found in *peppermint*. Waxes are also a common form of alcohol. Mixture of alcohol and fatty acids are generally found on leaves and other parts of plants.

3. **Volatile oils**- Volatile oils are a combination of simple molecules like **isoprene** or **isopentane**, which can mix in various ways to produce **terpenes**. Volatile oils are mostly found in aromatic plant- like *peppermint.* The combination of oils and the smell can be in variations, even if they belong to the same type of the plant, basically it all depends on the concentration of the oils. Many therapeutic oils are produced by extracting this oil from the relevant plants. Most of the aromatic oils like *eucalyptus oil, garlic oil* and *thyme oil* are the examples.
    a. Volatile oils have antiseptic function as well as it has a property of increasing the immune system by rising up the white blood cells in the blood. Volatile oils have the quality of arousing the tissues they come in touch with, some oils like mustard oil irritates the skin slightly, while oils like menthol and camphor leave a numb feeling. Oils help digestion by arousing the lining of the colon which gives reflex reaction thus increasing the gastric juice to flow, which also makes the person feel hungry. People, who suffer from acute pain, can benefit from these oils by calming the peristalsis in the lower part of the intestine.
    b. Volatile oils are also beneficial for the central nervous system. *Chamomile oil* has calming and sedative effect while *peppermint oil* helps in stimulation. Both these oils have the quality of reducing conditions, like tension and depression. When there is an external application of aromatic oils on the body, the aroma is easily transferred through the nose to the brain, triggering an instant reaction.
4. **Carbohydrates-** A huge varieties of carbohydrates are found in the plant kingdom, in the form of **sugar, starches** and **cellulose**. Large cellulose known as polysaccharides combines with other chemicals

and produce molecules known as **pectin**, which are generally found in fruits like apples and even in seaweeds like agar. These compounds have the property of making gel, which are further used in medicine. **Gums a**nd **mucilages** are carbohydrates, which are complex in nature and are retained in soothing and healing herbs like plantain and marshmallow. Once applied; it relaxes the lining of gut, arousing a reflex reaction that goes to the spinal nerves and to areas like the lungs and urinary tract. The mucilage not only reduces irritation, it even reduces inflammation of the elementary canal, and it also decreases the sensitivity of the gastric acids. It can cure diarrhoea and reduce peristalsis.

5. **Phenolic compounds-** Phenol is building block of many components of plants. The compounds of phenol could be simple in structure or could be composite made up of a variety of basic molecules. One of the simplest phenolic compounds is **salicylic acid**, which is generally found in the combination with sugar and it forms glycoside which is found in willow, meadowsweet and wintergreen. It functions as an antiseptic, painkiller and has anti-inflammatory function too. Eugenol oil is found in cloves and it functions like antiseptic on the urinary system of the body because it contains phenol hydroquinone.
6. **Tannins-** Tannins in herbs have the quality to functions as astringents. They act on proteins and other chemicals to protect the layer of the skin and the mucous membrane. It can even bind the tissue of gut, decrease diarrhoea and stop any internal bleeding. They are also used for external application like treatment of burns, healing wounds and reducing inflammation. Tannins can cure eye infections like conjunctivitis or even infections of the mouth, vagina cervix and rectum.

7. **Coumarins**- The evoking smell of hay is due to *coumarins* chemical. Grass contains these aromatic compound coumarins. Coumarins do not have much effect on the human body but one of its component known as di-coumarol is an anti-clotting agent. Coumarins have been used extensively in allopathic medicine. Small doses of *warfarin* are used as an anti-clotting drug to cure conditions like *thrombosis* and as a rat poison large doses are used.
8. **Anthraquinones-** Anthraquinones are found in plants, which are supposed to be effective laxatives and they are also natural dyes. They are generally glycosides and are found in plants rhubarb, yellow dock, senna, aloe and buckthorn. Anthraquinones stimulate the colon after eight to twelve hour of ingestion in the presence of bile juice. If the colon is over stimulated, then colic pain could occur. Anthraquinon are usually combined with carminative herbs to cure this type of condition.
9. **Flavones and flavonoid glycosides-** Flavones and flavonoid glycosides are group of chemicals commonly found in most plant components. They can actively act as anti-spasmodic, diuretic, circulatory and circulatory and cardiac stimulant. Some like rutin, hesperidins and bioflavonoid (vitamin P) can aid circulatory system and decrease blood pressure too.
10. **Saponins-** Saponins have drawn the attention of majority of pharmaceutical chemists in the world. They are utilized in the synthesis of cortisone, which is an anti- inflammatory drug, and they are widely used in the synthesis of sex hormones. Saponins are found in herbs, which do not essentially act in a similar way but the body can use it in a similar way. The body can use them as raw products to build the necessary chemicals. *Apamarg, onion and safed musli* are the herbs which contain saponins, which are used to produce anti-

inflammatory drugs. Saponins are very good in stimulating the upper digestive tract.

11. **Cardiac glycosides**- Cardiac glycosides are those chemicals which have been used in medicine to give support to the heart problems. Cardiac glycosides are made of mixture of sugar and steroidal agylcone. Cardiac glycosides are found in most flowering plants. Lily of the valley, foxglove and strophanthus family are the best sources of cardiac glycosides. In therapeutic treatment cardiac glycosides are very effective in increasing the force and power heart beats, and at the same time keeping the level of the oxygen intact for the heart muscles. They can help the heart to function in a steady manner without straining the organ.
12. **Bitter principles-** Bitter principles stands for a group of chemicals that have an extremely bitter taste. They are diverse in structure. Terpens and irridoids are the bitterest ones. Bitter principles are known to be very effective in most therapeutic treatments.
13. **Alkaloids-** Alkaloids are the most powerful group of plant constituents that act effectively on the human body and mind. Under the group of alkaloids; hallucinogen, mescaline and brucine are very poisonous one. Alkaloids can work on the liver, lungs, nerve and digestive system. Alkaloids as a group are very different in their structure and they are separated into 13 groups accordingly.

Plants up-regulate and down-regulate their biochemical paths in response to the local mix of herbivores, pollinators and micro-organisms. Also synthesize a bewildering variety of phytochemicals but most are derivatives of a few biochemical motifs. The chemical profile of a single plant may vary over time as it reacts to changing conditions. The secondary metabolites and pigments which are present in the plant have therapeutic actions in humans and which can be refined to produce drugs.

There is a need to integrate traditional medicines into the modern medicine practices. This requires clinical validation by conducting controlled clinical trials.[21]. The methods used for clinical validation for modern medicines must be applied to prove the safety and efficacy of the finished herbal products.

In Chhattisgarh there is a paucity of data on the medicinal uses of herbs prevalent in urban, rural and tribal areas to cure various ailments. Therefore this study has been undertaken. In Chhattisgarh abundance of herbs are present and many people of rural and tribal areas are using these herbs to cure various ailments. The crude form of the herb, its extract, tea, tinctures and oils are common in the urban, rural and tribal areas of the state as home remedies.

Thus the study of prevalence of herbal and home remedies from the rich traditional sources requires an integrated approach. The advantages of traditional system of medicine with respect to safety and efficacy could result in a better utilization of our herbal resources with application of the scientific methods.

Chapter I Cited References

[Bibliography / Webography]

1.Kamboj, B. P. (2007). "Herbal medicine". ***Curr Med*** 78: 35-39.

2. **Tapsell, L. C. (2006). "H**ealth benefits of herbs and spices: The past, the present, the future,Med, August (2006) **PMID 17022438.**

3.Seth, S. D. and Sharma, Bhawana (2004)."Medicinal plants in India: commentary." ***Indian J Med Res,*** 120 July 2004, pp 912.

4.Xiaorui Zhang, (2002).'Essential drugs and medicine policy (EDM"), WHO/Geneva.

5.WHO.int/ medicinal areas/ traditional/ definition/ index/ html.

6.www.pharmainfo.net/intrust**."**Medicinal products containing as active ingredients, exclusively plant material and/ or vegetable drug".

7.Sachan, V . Kohli, Y. and Gautam, R. (2009).www. Pharmainfo./net/justvishal/publications."Regulatory issues for herbal products, A Review."

8.Reddy, 1027:http://hubpages.ccom/herbs.

"A history of modern herbalisim".

9.Http://cetular.ucdavic.Edu/mg/articles/n052203html."Take time to identify, toxic plants to keep your family and pets safe'.

10.Billing, J. Sherman, P.W. (1998)"Antimicrobial functions of spices: why some like it hot". *Q Rev Biol. 1*998 Mar;73(1):3-49.
PMID:9586227

[PubMed - indexed for MEDLINE]

11 .Ebbell, B. Trans (1937) "Papyrus Ebers Copengahagen: Levin and Munksquatr".

12. Ibdi p, 25. Piter Pinco Chase "The ailments and physician of Dr. Johnson, ***Yale journal of Biology and Medicine.*** Pp 370.

13. Riddle, J. M. (1987) "Folk tradition and folk medicine: Recognition of Drugs in Classical. Antiquity." In: Folklore and Folk Medicines, J. Scarborough, ed Madison, wl: American history of the pharmacy.

14. Hort, A. F. (1948) "Theophrastus Enquiry into Plants, 2 vols. Cambridge: Harvard University Press.

15. Divedi, Girish. Dwivedi, Shridhar. (2007) "History of medicine : Sushruta The clinician teacher par excellence" ; National Informatics Center. Htpp://medind.nic.in/iae/retrived 2008 – 10 – 08.

16. Castelman, Michale (2001) "The new healing herbs : the classic guide to Nature's Best Medicine Featuring the top 100 Time Tested Herbs". Pp- 15.

17. Pharmaceutics and Al chemy http://w.w.w.nlm.nih.gov/exhibation / Islamic_medical/islamic-II html.

18. Diane, Boulanger (2002)."The islamin contribution science , Mathematics and technology" OISE papers, in STSE Education, Vol,3.

19. **Huff Toby, (2003) "**The rise of early modern science, Islam, China and theWest".Cambridgeuniversitypress.p210ISBN0521529948.

20. Evol Hum Behar, (2001) "Why vegetables recipes are not very spicy". **5 22 (3): 147-**163. **PMID 11384883: 11384883**

21. Philip, K. Hitti (1992) "Miracle of Islamic science". Appendix B, Knowledge House Publisher. ISBN- 0911119434.

22. Herbalism: Wikipedia, the free encyclopedia.

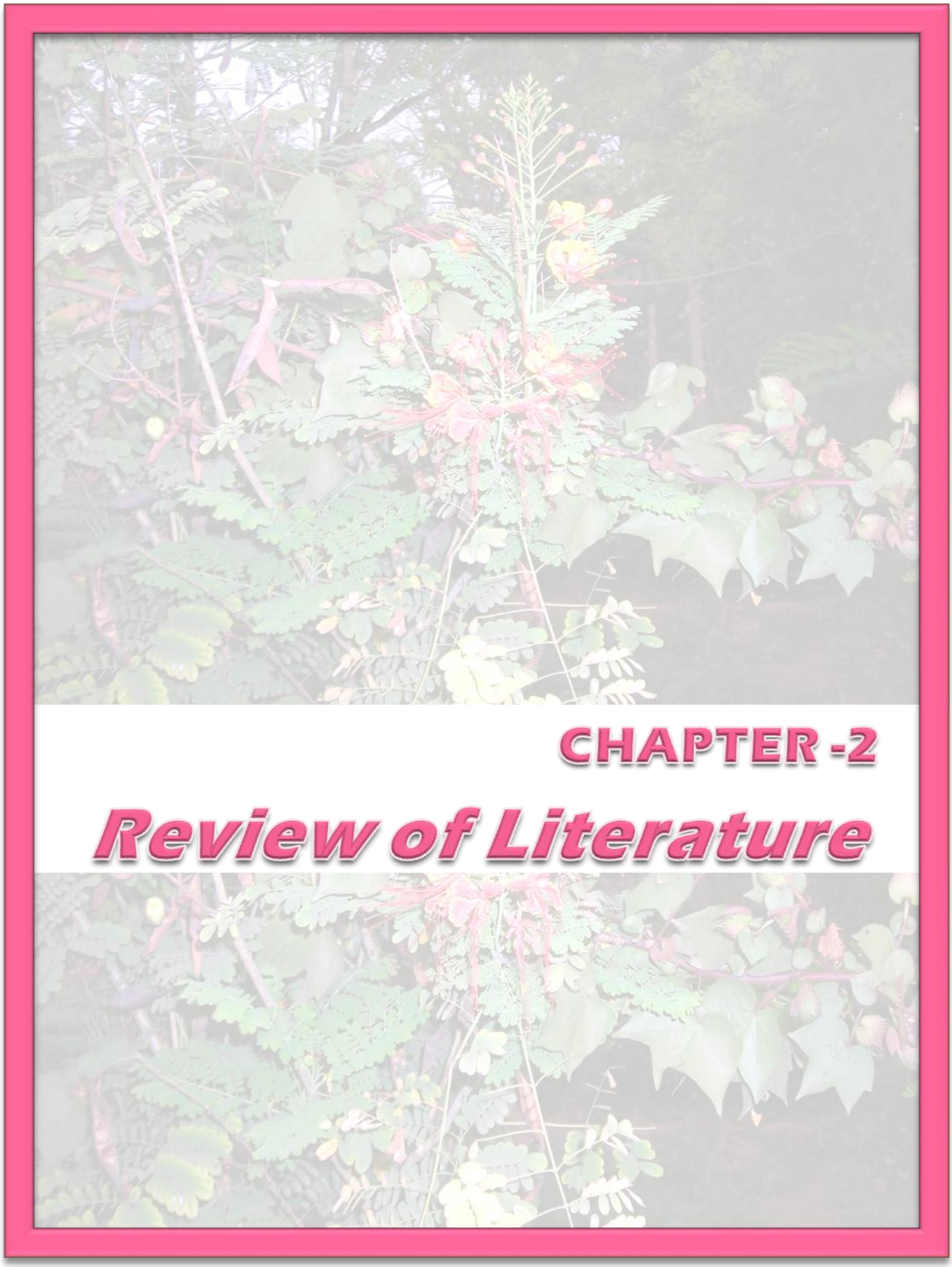
23.**D. Craig Brater, and Walter, J. Daly (2000) "**Clinical pharmacology in Middle Ages: principles that presage the 21st century", ***Clinical pharmacology and therapeutics*** . 67 (5), p447-450 [449].

24. **Walter, C. J. Daly and D. Craig Brater(2000) "**Medieval contributions to the search for truth in clinical medicine, Perspectives in Biology and Medicine"43 (4), p530-540 (536). Johns Hopkins University Press.

25. Jackie Power ,"Medical herbalist" www.jackie.co.uk/hi/html

26. D. S. Fabricant, and N. R. Farnsworth, (2001) "The value of plants used in traditional medicine for drug discovery". Environmental Health Perspectives, Vol. Supplement I: Reviews in Environmental Health, 2001 O.pp 109: March 2001.

27. Baldwin Ian Thomas, (2003) "Unraveling the function of secondary metabolites", Publisher- Sinauer Repositony, Max PlankSociety- e-Document server, Germany.



CHAPTER -2

Review of Literature

CHAPTER II

REVIEW OF LITERATURE

Reflecting the prominent role that "Folk" medical traditions play in human environmental interactions, especially insofar as their impact upon worldwide problems of morbidity and mortality, indigenous medical practices have been the subject of much attention in the literature of various disciplines. To date, the investigations of indigenous medical practices have by and large, concentrated on the socio-cultural features of these system; for example, folk attitudes regarding diseases etiology and treatment; status role and personality of local practitioners, magico-religious significance and ritual context of certain medical systems that has received only cursory attention from the social and natural sciences in the physiological efficacy of indigenous medicine.

In recent years, there has been a heightened interest among Indian and other western scholars in their own herbal pharmacopeias. Recently ICMR has declared it, as one of the most important thrust areas of research. Even the council has decided to work with the regional people, herbal users living in the interior villages and the tribes of deep forest pocket. Working in close collaboration with traditional and herbal medicine practitioners in the region ICMR has set the following important objectives -

- To create general awareness about the health and illness.
- Promote scientific temperament for the documentation and research of the primary information available around them.
- To collect, collate and disseminate relevant scientific information of herbal medicine.

Therefore the importance of empirical research on traditional plant medicines has been recently re-emphasized by the ICMR and WHO. In recognition of the fact that traditional healers and their pharmacopeia constitute the basic core of primary health care in 90% of rural populations in

developing countries [Ayensu1978]. The WHO has been promoting the laboratory investigations into the pharmacological and other properties of indigenous plant medicine (Penso, 1977, WHO1925).

A review of literature reveals that as more data becomes available from phytochemical analysis of medicinal plants, more credibility is given to claims of therapeutic efficacy for certain indigenous medicines. The reviews have been classified under the following heads-

- Review of literature on **Global Prevalence** of Herbal Medicine.
- Review of literature on Prevalence of Herbal Medicine in **India.**
- Review of literature on Prevalence of Herbal Medicine in **Chhattisgarh.**
- Review of literature on Clinical Studies on **Medicinal Herbs.**

Review of literature on Global Prevalence of Herbal Medicine-

The twentieth century has witnessed a revolution in human health care. The dramatic decline in mortality, increase in life expectancy and the eradication of certain communicable diseases like smallpox, plague, malaria are all part of this success. Scientific innovation, leading to the development of new drugs and medicines, has played a major role in this project.

However, despite these achievements, it is estimated that over one-third of the world's population lacks regular access to affordable essential drugs. For these people, modern medicine is never likely to be a realistic treatment option. In contrast, traditional medicine is widely available and affordable, even in remote areas, and generally accessible to most people. According to **World Health Organization**, in India 70% of the population uses *Indian medicine* which is readily available around them.[1]

Similarly in **Africa,** traditional healers and remedies made from plants play an important role in the health of millions of people. A study was

undertaken by the group of doctors about the relative ratio of traditional practitioners and university trained doctors in relation to the whole population in African country. The study revealed that in **Kwahu district,** for every traditional practitioner there are 224 people and against one university trained doctor for nearly 21,000 people. The same position was appeared in **Swaziland** where for every traditional healer there are more than 110 people while for every university trained doctor there are 10,000 people.[2] /w This indicates that higher number of herbal traditional practitioners are available in the region in comparison to allopathic doctors.

In a study; about the attitudes and use of herbal medicines among pregnant women in **Nigeria,** it has been found that about 60.5% of the respondents were using herbal medicine in crude forms or as pharmaceutical prepackaged dosage forms, while 74.3% preferring self prepared formulations. Almost 30% who were using herbal medicine at the time of the study believed that the use of herbal medicine during pregnancy is safe. Respondent's reasons for taking herbal medications were varied, such as herbs having better efficacy than conventional medicines (22.4%), herbs being natural, are safer to use during pregnancy than conventional medicines (21.1%), low efficacy of conventional medicines (19.7%).[2]

In a study conducted by Giday M. et al [2009] revealed that medicinal plant knowledge of the *Bench ethnic* group of **Ethiopia** is very high. The study revealed that there were 35 Bench medicinal plants. These herbs were used against human ailments. The majority of Bench medicinal plants were herbal in nature. Leaf was the most frequently used plant part in the preparation of remedies. Significantly higher average number of medicinal plants was claimed by men, older people and illiterate ones as compared to women, younger people and literate ones respectively.[3]

A study was conducted by Pieroni A. Glusti M. E. [2009] in the **North-West Italy** to find out the traditional uses of herbal medicine among the *Occitan communities* living in Blins/ Bellino and Chianale in the upper Val Varaita, in the Piectmontese Alps **North Western Italy**. Results of this study revealed that about 88 botanical taxa were used by them. Comparison with and analysis of other ethno medicinal studies previously carried out in other Piemontese and surrounding areas showed that approximately one fourth of the botanical data quoted in this survey were also known in the other surrounding of Occitan valleys. It is also evident that traditional knowledge in the Varaita valley has been heavily eroded[4].

A comparative analysis of medicinal plants used in **Italy** and **Tunisia** was done by Leporatti M.L. et al. [2009] the study showed that the 153 medicinal species belonging to 60 families present in flora was used in traditional medicine. A considerable convergence has been appeared in therapeutic uses of many species emerged from these data. This comparative analysis strengthens the firm belief that ethno botanical findings represent an important shared heritage, developed over the centuries.[5]

In the study by Stephen Bent (2008) at university of California, San Francisco Medical Centre on the efficacy, safety and regulation of herbal medicine in **United States** showed that in U. S., herbal medicines have gained popularity and 20% of the populations were using these medicines. In U .S. generally the herbal products are complex mixtures of organic chemicals.[6]

The study conducted by Della A. Forster et al in **Australia** in 2006 revealed that the use of herbal supplements in pregnancy is very high. Pregnancy care-providers were aware with herbal supplements. Results of the study showed that 36% women took at least one herbal supplement during

the current pregnancy. The most common supplement taken were Raspberry leaf (14%), Ginger (12%), and Chamomile (11%).[7]

A study conducted in **Argentina** on "Ethno medicinal knowledge in rural communities of Cordoba" by Toledo B.A. and Galetto L. [2009] showed that in the rural community of Argentina the medicinal species were widely used where as the knowledge on edible plants was eroding. This comprehensive approach suggested that the cultural environment has a stronger influence than the natural environment on the use of medicinal and edible plants in rural communities of Cordoba [**Argentina**].[8]

In a study Alexandors S. Botsaris has observed that the herbal medicines were used in the treatment of malaria in **Brazil** [2006]. Results of this study showed that 40 plant species were used to treat the malarial fever. Amongst them 8 species were prominently labeled as anti malarial drugs.[9]

In the study of Tabuti J.R. Lye K. A. Dillon S.S. in June [2000- 2001] in the Bulamogi country in **Uganda** showed that 229 plant species were used by the natives of the country to treat various ailments.[10]

Rainer W. B. Bussmann and Douglas Sharon from university of Hawaii and university of California, Berkeley, USA conducted a study about the Traditional medicinal plants used in Loja province of **Southern Ecuador**. They concluded that 250 plant species were found there in the traditional medicine system. Most of them were used for medicinal purpose, some of them for food and fodder. The highest number of species were used for the treatment of "magical" ailments [psychosomatic problem] followed by 34 for respiratory disorder, 28 for problems of urinary tract, 25 for fever and malaria, 23 for rheumatism and 25 for nervous system problems.[11]

A study was conducted about the use of herbal mixtures in traditional medicine in **Northern Peru**. In this study it was found that total 974 herbal

preparations were used to treat 164 different afflictions. In most cases, healers used only one or two mixtures to treat the illness. However in some cases up to 49 different preparations were used to treat the same type of diseases. This indicates the high degree of experimentation among the people of northern Peru. Along with this 330 plant species representing almost 65% of the medicinal flora [used in this region] were applied in these mixtures. In this they have confirmed that mixture were used for the treatment of inflammations, infections and blood purification as well as cough, cold, bronchitis or other respiratory disorders, or urinary infections and kidney problems. In their study they also found that mixtures were used for the treatment of disorders of nervous system, anxiety and heart problems .[12]

A new approach to study the medicinal plants with **tannins** and **flavonoids** content from the local knowledge from **Brazil** revealed that medicinal plants known with anti-inflammatory activity and healing capacity are a good criterion for identifying species with high level of tannins. According to them same criteria's are not useful for identifying plants with high flavonoid content[13].

In North centre region of **Morocco** [1997]; Jouad H. et al performed a study on medicinal plants used for the treatment of diabetes, cardiac and renal diseases. Data showed that phytotherapy has always been practiced in this region. All persons interviewed had indicated that the reason for using phytotherapy is that - the plant medicines are cheapest [54%] and more efficient [38%] than modern medicines. They also reported that the result of phytotherapy is better [72%]. In their study they found that total 90 plants were reported by the users. Amongst them were 54 plants for diabetes, 11 for cardiac diseases, 19 for hypertension and 33 for renal diseases.[14]

In the mountain located area of Monte ortobene, near Nuoro, in central **Sardinia [Italy],** an ethno botanical investigation of plants and traditional knowledge was carried out by Signorini M. A. et al. [2009] Study revealed that in this community people were showing several interesting uses of plants, thus keeping the custom alive of herbal medicines. 72 plants were cited by the informants as being traditionally used in the area.[15]

In Yunnan, a case study was performed by Long C. et al [2002] on Medicinal plants used by the *Yiethnic group* showed that 116 medicinal plant species were found to be useful by the local people in the treatment of various diseases, especially those relating to trauma, gastrointestinal disorders and common cold. 55 different species were used in treating wounds and fractures and 47 were used to treat the gastrointestinal disorders. Traditional **Yi-herbal medicines** are characterized by their numerous quantities of herbaceous plants and their common preparation with alcohol. In this ethnic group the investigators found that some new curative effects and new preparation method existed in their system which will prove to be a precious source for the future development of new drugs and further phytochemical, pharmacological and clinical studies.[16]

In study by Zheng X. L. and Xing F.W. [2009] on *Li-Ethnic Group* Mt. Yinggling of Hainan Island, **China** revealed that 385 species belonging to 290 genera in 104 families were used for the treatment of various diseases. In their observations it was found that 20.1% plant species were used for injuries, 18.3% for musculo-skeletal disorders, and 18.0% for infections.[17]

In a study by Liuy, Daoz, Yangc, Livy, Longc on medicinal plants used by the local people in Xizang **[Tibet]** in 1960s showed that these people were strongly influenced by the various local herbal practices. About 68 plant species in 54 genera of 40 families were recorded and collected. These traditional prescriptions, preparations, new medicinal plants and folk

medicinal knowledge and principles were discovered and summarized by local traditional Tibetan healers through times of treatment practices, and were passed down from generation to generation. Their study showed that a lot of traditional Tibetan medicinal prescriptions and methods of use of different herbal medicine were existing among them. It implies that more Tibetan medicinal plants and traditional knowledge can be discovered.[18]

A survey conducted by Quinlan M.B. in *Hispanics population* in **China** showed that, three important medicines- *Gossypium barbadensc L*, *Lippia micromera Schauer* and *Piectranthus amboinicus sprengel* were commonly used in the treatment of "Fright" a **Caribbean culture-bound psychiatric syndrome**.[19]

In **Sweden¿** De Boer H. Lamxayr performed a comparative study about the plants used during pregnancy, childbirth and post-partum period. Their findings revealed that 55 different species were used in women's healthcare, of which over 90% were used in postpartum recovery. They also found that medicinal plants which were used by the *Brou, Sack* and *Kry* to facilitate child birth; alleviate menstruation problems, assist recovery after miscarriage and post partum recovery.[20]

In **Ethiopia**, A. study was conducted by Teklehaymanot T. to see the distribution of knowledge of medicinal plants between ladies and gents people of **Dek-Island**. Conclusion of his study showed that the knowledge of medicinal plants is equally distributed amongst the male and female population of the country.[21]

In **Tanzania**, Moshi M. J. et al [2009] conducted a study on the Ethno medicine of the *Haya people* of Bugabo ward. The results revealed that 94 plant species representing 84 genera and 43 families were used in the treatment of various diseases. In this study the researchers found that family **Asteraceac** had the highest number of species being used as traditional medicine. The

study revealed that Malaria was treated by using the highest number of medicinal plants species (30), followed by skin conditions (19), maternal illness and sexually transmitted diseases (14), respiratory diseases (11), herpes simplex and peptic (10). Majority of the species were used to treat less than five different diseases. Leaves were the most commonly used parts. [22]

In the study of Jacqueline S. et al **in America** it has been found that 21% of the Americans were currently taking at least one herbal product or dietary supplement. *Glucosamine, Garlic, Echinacea* and *Gingko billoba* were the most frequently cited substances used by them. The earlier statistics of **National Health Interview Survey** estimated that more than 38 million Americans were using herbs and dietary supplements. Recent estimates have replaced this number as high as 60 million.[23]

In **United States** David M. Eisenberg and coworker [1993] studied the prevalence, cost and pattern of use of unconventional medicine. In his study they found that about 34% respondents were using at least one unconventional therapy in the past year with the highest use reported by the nonblack person from 25 to 45 years of age who had relatively more educated and having better income.[24]

In **United States**, Yumie E. Satow and co worker studied the prevalence of Ayurvedic medicine among **Asian Indian.** They found that the higher percents of ayurvedic medicine were used by them because of cultural relevance, potential therapeutic value and possible safety concerns. About 95% participants were awere of Ayurveda, 78%, had knowledge of Ayurvedic products or treatments and about 59%had used or were currently using Ayurvedic medicines.[25]

In **Americ**a a survey was conducted by Jacquelins S. Marina et al in collaboration of Kansas City School of Medicine on the herbal products and

dietary supplements used by the people of America. The results of this study revealed that 21%respondents were currently taking at least one herbal product or dietary supplement. *Glucosamine, Garlic, Echinacea, gingko billoba* were the most frequently cited substances by survey participants. In their study they found that Americans are increasingly replacing prescription medications with vitamin and mineral supplements as well as medicinal herbs.[26]

In a study on **Russians/Ukrainians** in the Sukhodol valley, primorye by S. A. Moskalenko et al (2002) [in Pacific Institute of Geography, Academy of Science of the USSR] showed that *Russian* and *Ukrainian residents* of the Sukhodol valley in primorye USSR, [the extreme south eastern area of the Soviet Union has interesting because of its nature, climate and rich flora]. Informants had shown broad knowledge of pharmacological properties of wild and cultivated plants of the area. The study had recorded 93 plants belonging to 41families.[27]

A study was conducted on ethno-medicinal plants and method of application of herbal remedies by *Gwandara Tribes* of Sabu Wuse in Niger State, **Nigeria**, to treat mental illness by J. A. Ibrahim and his coworker. Results revealed that 18 plants belonging to 10 families were used for the treatment of this ailment. They prepare remedies from plants and kept in the form of decoction and infusion or power and administered in various ways like inhalation/sniffing or bathing of patients with either the decoction or infusion and fumigation. These plants were used alone or in combination with other plants. [28]

In **Nigeria**, another study was performed by Titilayo O. Fakeye and coworker about the attitude and use of herbal medicines among pregnant women in Nigeria. Results revealed that more than 2/3 of respondents (67.5%)

had used herbal medicines in crude forms or as pharmaceutical prepackaged dosage forms, with 74% preferring self prepared formulations. Almost 30% subjects; who were using herbal medicine at the time of study believed that the use of herbal medicine during pregnancy is safe. Respondents reasoned for taking herbal medications were varied and included reasons such as herbs having better efficacy than conventional medicines (22.4%), herbs being natural, and safer to use during pregnancy than conventional medicines (11.2%), traditional and cultural belief in herbal medicines to cure many illness (12.5%), low efficacy of conventional medicines (19.7%), easier access to herbal medicines (11.2%), and comparatively to low cost of herbal medicine (5.9%). These researchers concluded that the wide spread use of herbal medicines by pregnant women in Nigeria highlighted an urgent need for health care practitioners and other health care personnel to be aware of this practice and make efforts in obtaining information about herb used during antenatal care.[29]

In **South-West Nigeria**, a study was conducted by Lawal, I, O. and co worker on the use of ethno- medicine in the treatment of high blood pressure. Results of this study showed that over 7 types of herbs were taken by *llugun people* [a tribe of Africa]. People of this region were the custodian of the traditional medicinal plant uses. This research had shown that *llugun community* in **Ogun state** is rich in traditional knowledge and diversified in medicinal plant uses.[30]

In **Nepal,** an ethno-medicinal study was conducted by Ripu M. Kunwar and coworker. Results of this study showed that a large number of plant species were used as traditional medicine. These workers found that medicinal and aromatic plants played a vital role in the life support system of contemporary civilization by serving the purpose of maintaining good health.[31]

In another study on the ethno botany in **Nepal Himalaya** by Kunwar R. M. et al showed that in Nepal up to 55% flora of the study region had medicinal value. This indicated a cast amount of undocumented knowledge about important plant species that needs to be explored and documented. In their study the researchers found that the richness of medicinal plants decreases with increasing altitude but the percent of plant used as medicine steadily increased with increasing altitude. [32]

In **Central Nepal**, a study of indigenous use and bio-efficacy of medicinal plants of Rasuwa District was done by Uprety Y. et al. Results of this study showed that total 60 medicinal formulations from 56 plant species were present among them. And these medicinal plants were used to treat various diseases with the highest number of species were used for gastro intestinal problems followed by fever and headache. Their study concluded that *Tamang people* possess rich ethno pharmacological knowledge.[33]

A joint study in **Sikkim** and **Nepal** on "medicinal plants as part of Tibetan medicine prospective" was conducted by the group of scientists showed that total 71 different Tibetan medicines were prescribed, including 138 different plants by the herbalists of this region. Among these 138 plants; 81 plants were typically grown at high and medium altitudes, and 57 grown in tropical and subtropical areas of the Nepal. Nevertheless, most [93%] of the prescribed formulae contained high altitude plants.[34]

A study was conducted by Abbasi, Arshad Mehmood and coworker in the hilly areas of Abbottabad district of North West frontier province of **Pakistan** in order to investigate the medicinal plants used in the folk medicine to treat various ailments by the local inhabitants. These researchers were found that the users were making medicines by using various plant parts of a

single plant or multiple plants. A total 54 plant species belonging to 51 genera were recorded for their therapeutic uses[35].

In a study on "Inherited folk pharmaceutical knowledge of tribal people in the Chittagong Hill tracts", **Bangladesh by** Biswas Animesh and coworker showed that the indigenous people possess the knowledge of traditional healing system using plants. In their country, due to human interference the wild verity of medicinal plants was declining rapidly. Many of them have become rare and some were facing extinction. In their communication 190 medicinal plant species were recorded for most valuable medicinal properties[36]

Review of literature on the prevalence of Herbal Medicine in India

- Andaman island
- Karnataka [Bidar district]
- Karnataka[Shimoga district]
- Karnataka [Kunabi tribe]
- Tamilnadu [Tribes of Madurai district]
- Tamilnadu [Kumaragiri hills]
- Tamilnadu [Theni district]
- Tamilnadu [Western Ghats]
- Andhra Pradesh [Kurnool district]
- Maharashtra [Pune district]
- Maharashtra [Pawra tribes of satpura hills]
- Orissa [Didayi tribesof malkangiri district]
- Orissa [Simillipal Biosphere]
- Orissa [Orissa state]
- Madhyapradesh [Tribal of M.P.]
- Madhyapradesh [Gond tribes]

- Chhattisgarh [State level study]
- Chhattisgarh [Tribal of the state\
- Rajasthan [Rural of churu district]
- Rajasthan [A state level study]
- Southern Rajasthan
- Uttarpradesh [Varanasi]
- Uttarpradesh [Chandauli]
- Uttarpradesh [Aligarh]
- Tripura [Tripuri and reang tribe]
- Assam [Jaintia tribe, north cachar hiss]
- Arunachal Pradesh [Lohit community]
- Eastern Himalaya [Apatani community]
- Western Himalaya [Lahaul spiti tribe]
- Ladakh [Cold desert]

Review of literature on the prevalence of Herbal Medicines in India-

In **Andaman Island,** Prasad P.R. and coworker found that 72 interesting medicinal plant species were used as a drug to cure 40 ailments. Most remedies were taken orally, accounting for 76% of medicinal use. They found that most of the remedies were from trees [55.6%] and herbs [22.2%]. The most widely used plant part were stem- bark [33.8%] and root [23.9%].[37]

In **Karnataka**, a study was conducted by Vidhysagar G. M. et al on traditional herbal remedies for the treatment of gynecological disorders in women. Results of their study showed that 18 plant species belonging to 13 families and 18 genera were used by them. All these herbs were from their surrounding environment.[38]

In **Karnataka** the *kunabi tribe* also possesses the excellent indigenous knowledge of herbal medicines. A study was conducted by Harsha V. H. et al

on *the kunabi tribe* of Karnataka showed that total 45 species of plants were used by kunabi community for the treatment of wide range of discomforts like fever, cough, skin diseases, rheumatism, snake bite, jaundice, dysentery etc. [39]

In **Shimoga district** of **Karnataka**, a study was conducted by Rajakumar N. and coworker which showed that 85 plant species were used to treat various ailments.[40]

In **Madurai district** of **Tamilnadu,** the tribal people are enriched with the knowledge of herbal medicine. In a study of Savarimuthu S lgnacinuthu et al revealed that *paliyar tribes* were using 60 plant species to cure skin diseases, poison, bites stomachache and nervous disorders. The results of this study showed that these tribal people were dependent on medicinal plants for their health care in Madurai district forest areas.[41]

In a study of herbal medicine, Alagesa Boopathi et al found that 80 species of medicinal plants were used to cure various diseases in **kumaragiri hills** of Salem district of **Tamilnadu**. During the study they found that 80 angiospermic plants were used by them. From these herbs, 10 species were used for snake bites and rest of the species were used for the control of blood pressure .[42]

An ethno-medicinal survey was carried out among the *Paliyar tribes* in the various tribal villages of **Theni district** of **Tamilnadu;** India. Results of the study revealed that a total 101 species of ethno medicinal plants were reported by them. The study showed the high degrees of ethno medicinal novelty in the use of plants by them. The use of plants among the *paliyars* reflected the revival of interest in traditional medicins.[43]

In a study of Vatsavaya S. Raju and coworker in **Andhra Pradesh** showed that there were 37 plants recovered to cure diarrhoea and dysentery

in the various parts of **Khammam district** of telangana region of **Andhra Pradesh**. In their study they found that most of the people were using single plant drug to cure diarrhoea and dysentery. Elaborating their study they have observed that among 37 plants, 11 medicine have come from stem bark, 2 from whole plants, 2 from tender shoots, 2 from seeds, 7 from fruits, 7 from roots, 1 form root bark and 1 from flower.[44]

C. Sudhakar Reddy and coworker have studied in **Kurnool District** of **Andhra Pradesh** about the uses of different plant based remedies in the treatment of various diseases. Their observation revealed that there were 51 plant species used to cure 26 ailments. Most remedies were taken orally, occurring for 62% of medicinal use, followed by external application [applied on skin]. Most of the reported preparations in this area were drawn from the single plant; mixtures were used rarely. Most of the remedies reported were from herbs, trees, shrubs, and climbers. [45]

A survey was conducted to gather information about utilization of plant resources for the treatment of eye infections, prevalent in tribal habitations of Nallamala forests**, Andhra Pradesh**. The result revealed that 33 species belonging to 29 genera and 22 families of flowering plant. This indicates the huge popularity of the herbal medicine among this people.[46]

Kosagle S. B. and coworker studied about the ethno-medicinal claims of 52 plant species for the treatment of abdominal pain, migraine, menstrual problems, urinary problems diarrhoea and jaundice.[47]

In a study of Tetali P. et al it was observed that 182 plants were used by the tribes and natives of the parinche valley of **Pune** district of **Maharashtra** to cure diarrhea. The results of their study revealed that parinche valley is an ethno medicinally rich area with abundance availability and knowledge of medicinal plants.[48]

Jagtap S. D. Deokule et al worked on *Pawra tribe* of satpura hills of **Maharashtra**. In their study they found that herbal medicines were very popular among these tribes. About 80 unique species were used to cure menstrual problems, poisonous bites, skin problems, stomach ache and tooth ache. They also observed that wisdom available with the tribe is transmitted through oral communication in local language and therefore needs conservation.[49]

A study of Jain D.L and coworker about the herbs used by the tribes of satpura region of **Dhulia** and **Jalgaon** district of **Maharashtra** revealed that *pawra, bhil*, and *pardhi tribes* were using fresh parts of the plants to cure various diseases. They have documented the plants which were used to cure wound, infections, skin disorders, stomach ache fever, cough, diabetes, diarrhea, eye infections and general weakness.[50]

In a study of Kanta Reddy V. S. et al; it has been explored that the people of **Bhubaneswar** and adjoining forest area were using juices and decoction in ample quantities to cure malaria and certain febrile diseases. Various plant parts such as leaves, flowers, fruits, bark, stem, roots, and in some cases whole plants were used to prepare these remedies.[51]

Raut S. D. and coworker studied about the ethno medicinal practices of *kol tribes* in **Simillipal Biosphere Reserve**, **Orissa,** India. In their study they found that 32 potential medicinal plants belonging to 24 families were used to cure leucorrhoea, sypermatorrhoea, piles, sore throat, rheumatism and phylaria.[52]

A study was conducted by Sahu P. and coworker in **Bargarh district** of **Orissa** about the medicinal use of *Pergularia deamia* for the treatment of different diseases. In their study they found that this herb was useful in the treatment of jaundice, asthma, amenorrhea, abortion, scorpion bite, fits,

smooth delivery, rheumatism, diarrhea, piles, boils. Odema, headache, bronchial congestion etc. [53]

A study conducted by Panda et al in **Mayurbhanj district**, showed that there were 8 plants which have been first time documented for the medicinal use in the 11 villages of district **Mayurbhanj, Orissa.** They stated that the Information regarding these plants and its medicinal uses can be used in new drug development. [54]

Tiwari D. K. et al, has found that the *Gond people* of Naoradehi Wild Life Sanctuary of **Madhyapradesh** were using 10 species of plants to cure fever, chest pain, bone fracture, headache, vomiting, abortion, snake bite, ear pain, eye pain and ulcer.[55]

Ravi Rajiv et al worked on the indigenous herbal remedies used in the treatment of fever by the *tribal community* of **Madhyapradesh.** In their study they found that *Baiga, Bhariya and Gond tribes* of this region were using various types of herbs to cure malarial fever. Total 15 types of herbs were sorted out by the investigator.[56]

According to the study of Jain Ashok K. et al, it has been explored that there were 20 plant species belonging to 18 families were used by *bhil tribes* to cure various ailments in **Madhyapradesh.** And.[57]

Upadhayay Parveen and coworker studied about the use of medicinal plants among the rural communities of churu district of Thar dessert, **Rajasthan.** In their study they found that total 188 plants were commonly used by the inhabitants of this region, to cure fever, rheumatism, diarrhea, asthma and piles. The knowledge about the total number of plants available in that area and their uses by the interviewer was positively correlated with people's age, indicating that this ancient knowledge tends to disappear in the younger generation.[58]

Mana K. l. and yadav B.L. studied about the use of medicinal plants to cure various diseases in **Southern Rajasthan**. Results of their study revealed that *Bhill, Domar, Garasia, Kolbelia, Rathodia and Meena tribes* of southern Rajasthan were using 31 plants species belonging to 31genera.[59]

Choudhary K. et al studied about the ethno medicinal uses of different plants by the native of **Jodhpur.** Results of their study revealed that people are blessed with the traditional knowledge of medicinal plants and were using them extensively for the treatments of various disorders.[60]

Khan Abdul Vigor and coworker studied about the medicinal uses of *Eclipta prostrate* in 5 district of **Western Utterprades**h. This study documented 33 medicinal uses of *Eclipta prostrate* for phytotherapy of 29 diseases. [61]

In another study khan Abdul Vigor and coworker in **Western Utterpradesh** showed that *Achyranthes Aspera* L. is frequently used to cure various gynecological disorders by the natives of this region.[62]

Singh A. and Singh S.K. studied about the medicinal plants used by people of **Chandauli district** of **Utterpradesh,** India. They found that people were using 40 medicinal plants. These plant species were used with exotic combination. Most of the plant [94 6%] reported were used to treat human diseases. According to these scientists many species of these medicinal plants were facing deforestation in the studied area [90%].[63]

Verma A. K. and coworker studied about the information's available on the traditional uses of 72 plant species collected from the campus of Banaras Hindu University, **Varanasi** [U. P.] and highlighted the use of these plants by local inhabitants.[64]

Painuli Jyotsana et al studied about the plant remedies used by the rural communities of district **Shahjahanpur** U. P. In their in-depth study they

found that over 70 plant species were in common use of people of this district to cure various ailments. [65]

Das H. B. and coworker of department of Botany, Tripura University has worked on the ethno medicinal uses of some plants by *tripuri* and *reang tribe* of **Tripura**. In their observation they found that these tribal people were involved in the use of herbal medicines for the treatment of various diseases. Traditional belief, concepts, knowledge and practices among them for preventing, lessening or curing the diseases are accessible till now.[66]

Sajem A. L. and coworker of Haflong Govt. College, Haflong, **Assam**, worked on uses of herbal medicine by *Jaintia tribes* of Assam. Altogether 30 types of ailments were reported to be cured by using 39 medicinal plants species. According to them their study underlines the potentials of such a kind of research and the need of documentation of traditional ecological knowledge pertaining to the medicinal plant utilization.[67]

Tamuli P. et al also worked in **North Kachar Hills** of district **Assam** on *Dimasa Kachari tribe*. [It is one of the prominent ethnic tribes of this region]. This study concluded that there were 25 plant species belonging to 23 families were prominently used by them to cure various ailments.[68]

Traditional anti-inflammatory plants used by *Lohit community* of **Arunachal Pradesh** were studied by Namsa N. D. and coworker of Tezpur university of Assam. In their study they have reported that 13 plant species were first time discovered in the role of anti-inflammatory medicine.[69]

Gajurek P. R. and coworker studied about the herbal remedies used by *Adi tribes* of Dehang Debang Biosphere Reserve of **Arunachal Pradesh** to cure gastrointestinal disorders. These scientists studied the pattern of use, preparation and dose administration of drugs in the treatment of various gastrointestinal disorders. According to them 25 plant species were used as

antidysentric and antidiarrhoeaic, 9 for stomachache, 4 as carminative, 3 as helmintic and one as laxative by these people.[70]

Jamir N. S. et al studied the traditional knowledge of *Lotha Nga tribes* of Wokha district of **Nagaland.** According to their report these ethnic group were using over 55 medicinal plants to cure various diseases.[71]

Kala C. P. worked on *Apatani tribes* of **Eastern Himalaya.** He found that about 52 types of ailments were cured by using 158 medicinal plants. This indicates the wide coverage of ethno medicine in their life.[72]

Singh K. N. and coworker studied about the use of herbal medicine in 4 selected tribal area of *Lahaul Spiti* of **Western Himalaya** region. They found that maximum use of herbal medicine is to cure stomach disorders i.e. 29 herbs followed by rheumatism 18 herbs, liver problems 15herbs, and for sexual ailments 9herbs. Leaves were used in maximum frequencies.[73]

Hynniewta S. R. Studied the herbal medicines used to cure jaundice by the *khasis tribes* of **Meghalaya**, northeast India. [74]

Parkash, Vipin and coworker studied the traditional uses of herbal medicine as household remedies to cure various diseases by the villagers residing in the remote foot hill areas of **Himachal Pradesh.** In this area there were 10 different plant species recorded for the medicinal uses and for other remedial purpose by the inhabitants.[75]

Tiwari Lalit et al studied about herbal medicine used in the veterinary. He found that 23 house hold plants and plant products were used in the treatment of animal diseases by local people and tribes of **Uttrakhand.**[76]

Saradhi P. Pardhi and coworker studied about the medicinal plants used by local vaidhya in Ukhimath block, **Uttrakhand**. They found that 60

different plant species were used by the vaidyas to treat headache, fever, and intestinal problems.[77]

Mairh A. K. and coworker studied traditional herbal wisdom of *Birhore tribes* of **Jharkhand.** They observed that Jharkhand is rich in biodiversity and traditional uses of herbs. *Birhore* a dwindling tribe of Jharkhand is the custodian of traditional herbal knowledge. Their way of utilizing plant as food, medicine and for other house hold purposes were not only novel but scientific also.[78]

Punjani Bhasker L. and coworker studied the herbal folk medicine used for urinary complications in tribal pocket of **North East Gujarat**. According to these worker natives of this region were using different herbs in the treatment of painful urination, scanty urination, excessive urination and haematuria. [79] Ajithabai M. D. and coworker studied about the herbal medicine used in the treatment of diabetes.[80]

Aggrawal Hemla et al worked on food used as medicine in **Jammu.** These scientists observed that different traditional foods were used to help in management of various ailments at home by most of the subjects. Results of their survey showed that in most of the homes of the studied sample (90%) one food item was used as medicine.[81]

Jainifer Raj et al worked on phyto foods of Nubra velly, **Ladakh-** [the cold dessert]. They expressed the findings of an investigation on traditional **wild edible plants** available in Nubra valley, Ladakh. 27 high altitude plant species belonging to 18 families were identified as edible plants and used for the preparation of **ladakhi dishes**. ***Shangso chonma, Ldum chonma, thanthdin chonma, Kobra chonma and Phololing chamyk*** are some of the famous traditional Ladakhi food item prepared from the wild edible plants.[82]

Review of Literature on Prevalence of Herbs In Chhattisgarh-

Chhattisgarh is one most prominent **HERBAL STATE** of India. There are many useful herbs found in the forest of Chhattisgarh. Most of them are used by the inhabitants the state. People those who are living in the rural and tribal parts of the state mostly depend on these herbal medicine for their health care. Safety and efficacy of these medicines are well known by the users of the herb. Following are important studies conducted by the researchers of this area. Among them some important studies are as follow-

Kala C. P. worked on the "Aboriginal uses and management of ethno botanical species in the forest of Chhattisgarh". Results of the study revealed that there were 73 ethno botanical species used by the tribal and non tribal people of the south Sarguja district of the state. Amongst them 22 were food based plants and 36 were used to cure different diseases.[83]

Shukla Rajesh et al worked on use of indigenous medicine used to treat the gynecological disorder by the tribal people of Chhattisgarh. The results of his study revealed that there were 22 herbs used by the tribal people. Inhabitants of these areas were well aware about the use of medicinal herbs to cure gynecological disaeases.[84]

Dr. R. N. Pati worked a lot on the "Ethno medicinal practices and sustainable development of Chhattisgarh". In his study Dr. Pati found that there are many important species of medicinal herbs, which have been at the dangerous level of extinction. And that needs to be immediate saving.[85]

Tirkey Amita worked on the "Ethno medicinal uses of plants of Fabaceae family by the tribes of Chhattisgarh "in her finding she found that there were 26 plants belonging to the Fabaceae family used by the tribal's of the state to cure various ailments.[86]

Review of Literature on Clinical Studies of Various Herbs-

1. Amalki- [*Emblica officinalis*]
2. Arjuna-[*Terminalia arjuna*]
3. Ashwagandha-[*Withania somnifera*]
4. Ashthi samhari-[*Cissus quadrangularis*]
5. Apamarg-[*Achyranthus aspera*]
6. Brahmi-[*Bacopa monnieri]*
7. Bala-*[Sida cordiafolia]*
8. Guduchi-[*Tinospora cordiafolia]*
9. Errand-[*Ricinus communis*]
10. Gokshura-[*Tribulus terrestris*]
11. Guggulu-[*Commiphora wightii*]
12. Haritaki-[*Terminalia chebula*]
13. Haridra-[*Curcuma longa*]
14. Hingu-[*Ferula foetida*]
15. Jatamansi-[*Nordostachys jatamansi*]
16. Kantakari-[*Solonum surattens*]
17. Khajura-[*Phoenix sylvestris*]
18. Sallaki-[*Boswellia serrata*]
19. Lasun-[*Allium sativum*]
20. Mandukparni-[*Centella asiatica*]
21. Gudmar-[*Gymnema sylvestre*]
22. Narikela-[*Cocos nucifera*]
23. Nirgundi-[*Vitex negundo*]
24. Pippali-[*Piper longum*]
25. Punarnawa-[*Boerhaavia diffusa*]
26. Pushkara-[*Innula racemosa*]
27. Salparni-[*Desmodium gangeticum*]

28. Sarpagandha-[*Rauwolfia serpentine*]
29. Satawari-[*Asparagus racemosus*]
30. Shunthi-[*Zingiber officinaaale*]
31. Tulsi-[*Ocimum sanctum*]
32. Yashtimadhu-[*Glycyrrhiza globra*]

[1] **Amalki -** [*Emblica officinalis*] Amalki consists of dried and fresh fruits of Emblica officinalis. In Chhattisgarh it is found in abundance. And commonly used in the treatment of gastrointestinal disorders.

Nirmala N. Rege and coworker [1999] studied the effect of amalki for protection against ethanol induced **gastric mucosal damage** in experimental animals and she found that the ulcer index was reduced in animals protected with Emblica officinalis.[87]

Amla has a very beneficial effect in diabetic patients. In a study conducted by M. M. Padhi et.al, [1998] showed that amla has a very good response in the **glucose tolerance level** in diabetic body. The observation has been recorded that after the administration of 1 gram of amalki powder twice daily with water for a period of six weeks. 45% patients showed a good response. That is > 50% reduction in random blood sugar level.[88]

Amalki is also useful for the **cardiac health.** Banerjee S. Rajak and coworker showed that continuous and regular intake of this herb causes certain myocardial adaption and protects the heart against the oxidative stress in ischemic reperfusion injury in rats.[89]

Another preparation of amla is called *amalki rasayan* was evaluated for its effect on **obese** human being. Results showed significant weight in obese subjects. Significant improvement in lipid profile has been recorded. That is decreased level of total cholesterol, LDL and raised HDL was observed. [90]

[2] **Arjuna [***Terminalia Arjuna***] -** Arjuna consists of dried stem bark of *Terminalia Arjuna*. Among the local people of the state it is called ***kauha ke jar***. It is abundantly present in the deep forest pocket as well as in the urban area. And it is commonly used for the treatment of high blood pressure and heart problems.

According to the scientist of central council for research in Ayurveda and Siddha Arjuna is very good cardio tonic, promotes bone fracture healing and useful in obesity and diabetes. Certain clinical studies have been performed by different scientists to prove the above mentioned properties.

In a clinical study performed by Gupta R. et al showed that amalki has reduced LDL level by 16% in the subjects having the previous history of **coronary heart diseases**.[91]

Amalki also increases the **cardiac efficiency** by certain level. The study of Rao Chandra sekher et al proves this fact.[92]

[3] **Ashwagandha-** [*Withania somnifera*] It is a well known herbal tonic, immuno-modulator, antistress and used in the treatment of insomnia, tuberculosis and in general debility. To prove its efficacy for the above mentioned properties many studies have been done by the scientists. Those studies have been cited over here.

Leemol Davis et al worked on balbic mice to see the **immunomodulatory effects** of ashwandha. In their study it was found that administration of *Withania somnifera* extract increased the total white blood cells, the maximum improvement was observed on 10th day of its administration. Results of their study showed that increased bone marrow cellularity and significant increase in alpha esterase positive cell number.

These findings are enough to support the traditional use of Ashwagandha as **immunodilator effect**.[93]

In a study of Mohammed Ziauddin et al it has been found that there was a significant increase in **hemoglobin concentration, red blood cell count**, **platelet count** and **body weight** in Ashwagandha treated mice as compared to untreated mice.[94]

In another study K.K. Dwivedi et al have seen that Ashwagandha has **anxiolytic** properties. It also showed adaptogenic effect and improve the cognitive functions.[95]

In the study of R. H. Singh et al it has observed that intake of Ashwagandha causes significant improvement in symptoms like nervousness, palpitation, tremors, headache anorexia, and lack of concentration, dyspepsia, fatigue and irritability. In addition to this; patients also showed a marked improvement in adjustment level, mental fatigue rate and immediate memory span test. [96]

[4] **Ashtisamhari-** [*Cissus quadrangularis*] - In the local language it is also known as ***Harjor.*** It is most abundantly appeared herb in the Chhattisgarh. And used as an important ingredient in most of the medicinal preparations. The most common use of this herb is to set the fractured bones. Many scientific evidences have proved this medicinal effect. Some of the scientific studies have been cited over here.

Annie Shirwaikar and her coworker found that this herb has a **very strong ossification quality**. In their experiment they demonstrated that the Ethanolic extract of *Cissus quadrangularis* at two different doses 500mg/kg. And 750 mg /kg were administered in the body of overiectomised rat. The result was very influencing. A strong effect on ossification and mineralization

of bones were appeared. In this study they also observed that this herb has a very strong restorative action on bones. [97]

In another study by D. K. Deka and coworker showed that methanolic extract of harjor exhibits faster initiations of healing with **increased osteoblastic activity** in experimentally fractured bones [radius-ulna] of dogs.[98]

A study of M. Panda et al on human body, it has been found that a polyherbal formulation containing harjor with some other herb showed fracture healing effect in 12 patients with simple traumatic fractures. This herb was found to be effective in the management of fractures.[99]

[5] **Apamarg-** [*Achyranthus aspera*] - Apamarg consists of whole plant of *Achyranthus aspera*. In Chhattisgarh it is found as a road side weeds. It is a famous herb for the treatment of asthma, fever, and haemorroids, flatulence, vomiting and anal fistula. Some clinical studies are available to strengthen the above findings.

S. S. Gupta and coworker studied about the **diuretic effect** of Apamarg. In their study they found that after the administration of calculated doses of Apamarg to the rats having anuria, there was a significant increase in the urine output of the adult male albino rats. In addition to this there is a significant increase in excretion of sodium and potassium was noted.[100]

In a study of N. C. Neogi et al Apamarg is very strong **anti inflammatory** and **anti arthritic action**. The activity of water soluble alkaloid **achyranthine** isolated from Apamarg was screened for the above action. In their study they found that achyranthine significantly reduced the weight of adrenal gland, thymus and spleen and raised the adrenal ascorbic acid and cholesterol content in rats.[101]

In a study of A. K. Khanna and coworker it has been found that the alcoholic extract of Apamarg at the dose of 100 mg /kg was **hypolipidaemic** in hyperlipidaemic rats. Authors opined that the possible action of cholesterol lowering effect is due to the rapid excretion of bile acids which in turn resulted into low absorption of cholesterol. [102]

The oil of Apamarg was studied for its **anti asthmatic** effect; the oil obtained from *Achyranthus aspera* was evaluated for its efficacy in 14 patients of bronchial asthma. To perform this study- they enrolled the patients with wheezing, dysponea, cough and cough with expectorant and sneezing. The oil 1-3 drops smeared on the betel leaf and administered thrice daily. Marked improvement was observed in the symptoms like dysponea (100%), wheezing (86.6%), and cough (73%), cough with expectorant (100%). Haemogram revealed significant fall in total leukocyte count, oesnophil and ESR.[103]

[6] **Brahmi-** [*Bacopa monnieri*] - Brahmi is one of the most important herb found in all over India in wet and damp places. In Chhattisgarh it is profusely scattered in the urban, rural and tribal areas. The important function of this herb is to enhance memory, to promote intellectual abilities and act as a cardiac tonic.

Some important studies showing its medicinal qualities have been cited over here.

Steven Roodenrys et al prove that Brahmi is useful in **memory enhancement** and for the treatment of **anxiety.** [104]

Brahmi is also effectively used in the treatment of **senile dementia**. A study conducted by Aruna Agrawal and coworker showed that memory loss due to normal ageing is arrested by Brahmi. In their controlled study they found that Brahmi not only arrested further memory loss but also shows the

process of subsequent memory loss and significantly reduced the acetylcholine reduction in the person suffering senile dementia. This finding indicates the positive role of Brahmi on the neurofunctions of brain.[105]

[7] **Bala**-[*Sida cordifolia*] - Bala consists of dried roots of *Sida cordifolia*. This plant is distributed in the tropical and subtropical parts of India. In Chhattisgarh it is found as a road side weeds. It is immunomodulator and famous health tonic. Various experiments on animals and human to prove its anti-inflammatory and analgesic activity has been performed by many scientists.

E. M. Frazotti and coworker has proved its **anti-inflammatory** and **analgesic activity** by giving the aqueous extract of S. cordifolia to the oedematic patients and found positive results.[106]

M. G. Ramu and coworker studied on effects of **Bala** in **anxiety** at different doses. They observed the beneficial effect of this medicine on human beings. [107]

[8] **Guduchi**-[*Tinospora cordifolia*] - Guduchi consists of stem of *Tinospora cordifolia*. This climbing shrub is distributed throughout in the country. In Chhattisgarh it is known as Guruch, Giloy and Amrita. It has anti-inflammatory, anti-pyretic and rejuvenating properties. It is used in the treatment of fever, diabetes, anemia, jaundice, diarrhea, dysentery and gout.

Guduchi is a powerful medicine to cure **diarrhea**. Study of Nirmala N. Rege et al explored that accurate combination of Guduchi, Satawari, Amalki and Haritaki reduces the gastric motility and intestinal transit.[108]

Guduchi was investigated for **adaptogenic activity** against biological stressors, physical stressor and phagocytic activity of peritoneal macrophages.

Results showed reduction in mortality due to single or mixed abdominal infections. [109]

A study conducted by Dash A. et al showed that Guduchi is very beneficial in the treatment of **tuberculosis. In** a randomized, double blind, controlled trial, Guduchi has shown to increase production of nitric oxide in tuberculosis patients, causing increased macrophage stimulation. Tuberculosis patients who are on Guduchi extract along with conventional anti tuberculosis treatment showed increased radiological recovery and sputum conversion as compared with anti tuberculosis treatment alone.[110]

Prem kishore et al has proved that Guduchi has **anti arthritis properties**. They used a polyherbal combination of Guduchi and some other herbs showed that patients were getting fast relief from pain and swelling.[111]

Mehra P. S. et al proved this herb as an **anti diabetic** medicine. In their study they found that after the administration of Guduchi with certain other herbs, a significant improvement was observed in the clinical symptoms of diabetes such as poly urea, poly dipsia and weakness.[112]

[9] **Erand**-[*Ricinus communis*] - It consists of dried, mature roots of *Ricinus communis*. It is a tall glabrous shrub or all most small sized tree found throughout in India. In Chhattisgarh it is found in waste lands and growing as a wild crop. It is useful in rheumatoid arthritis, backache, abdominal disorders, and fevers and pain in urinary bladder. Several studies have been done to prove its medicinal qualities.

Soumen Banerjee and coworker studied on anti-inflammatory activity of errand. He found that petroleum ether extract of roots of **Erand** has **anti-inflammatory activity** against oedema in albino rats. Erand significantly reduced the chronic inflammation.[113]

A study was conducted by Shrinivasulu M. on human beings to see the effect of Erand for the curative treatment of rheumatoid arthritis. A poly-herbal combination in the form of decoction (containing *Ricinus communis, Pongamia glabra, Zingiber officinale and T. chebula*) along to rock salt and honey was proved to cure the **rheumatoid arthritis** in sixty patients[114].

[10] **Gokshura**-[*Tribullus terrestris*] – Gokshura consists of dried, ripe, entire fruit of *Tribullus terrestris*. It is an annual, common weed found on the road side, waste places and posture lands; throughout in the state. It is a very good diuretic, anti-inflammatory, immunomodulator and used in the treatment of renal calculi, dysurea, and diabetes. Several studies have been conducted to prove these medicinal qualities.

Heidari M. N. and coworker studied about the **analgesic activity** of this herb. They gave the methanolic percolated extract of Gokshura to the male albino rats at the dose of 50, 100, 200, 400, 800 mg/kg I. p. and evaluated for its analgesic effect. The 100mg/kg was found highly significant.[115]

Muneer Al- Ali and coworker proved the **diuretic activity** of this herb. In a well designed and controlled study he found that aqueous extracts of Gokshura has produced marked dieresis with an increase in urine output by 189% when compared with control group.[116]

[11] **Guggulu**-[*Commiphora wightii*] - Guggulu consists of exudates Commiphora wightii. In the Chhattisgarh it is not frequently appeared but in some areas of Nagri [Dhamtari district, of Chhattisgarh state] it has been collected either by vaidyas or some herbal practitioners. Guggulu is a very powerful anti-inflammatory, immunomodulator and used in case of fractures to promote bone healing, to treat obesity, arthritis and skin diseases.

Satyavati G. S. and coworker studied the **hypocholestreamic** activity in male albino rabbits. [117]

Malhotra S. C. et al studied the **hypolipidaemic effect** of petroleum ether extract of Guggulu on 51 subjects. In their study they found that after the administration of controlled doses of this herb; a significant decrease in total cholesterol and serum triglyceride level were observed. This human study indicates **the hypolipidaemic** effect of the herb.[118]

Guggulu has also been proved effective in the weight management. A study conducted by Paranjee Prakash and coworker explored that patients those who are taking this herb showing marked reduction in body weight, skin fold thickness, circumferences of hip and waist. [119]

[12] **Haritaki** [*Terminallia chebula*] – Haritaki consists of dried pericarp of mature fruit of *Terminallia chebula*. It is found in all over the state. In the forest pocket of Nagri [Dhamtari district of Chhattisgarh state] this herb is present in abundance. It is a very good immunomodulator, cardiac and nervine tonic, used as a laxative and to treat indigestion.

S. Suchalatha and coworker investigated the cardio protective role of this herb in rats. Administration of Ethanolic extract of Haritaki in the isoproterenol induced rats with myocardial damage. And they found that marked improvement in the cardiac picture of these rats. [120]

Nirmala N. Rege and coworker showed that Haritaki at the dose of 140 mg/kg causes the significant increase of gastric emptying. This indicates the change in gastric motility and in intestinal transit.[121]

A polyherbal combination called **Triphala Guggulu**, in which Haritaki is a main component is useful to treat the patient of **diabetic retinopathy** .[both IDDM and NIDDM]. This study was performed by Singh A. K. and

coworker. Result of their study showed that there was a marked improvement in visual acuity field. [122]

[13] **Haridra**-[*Curcuma longa*] - Haridra consists of dry rhizome of *Curcuma longa* cultivated throughout in India. In Chhattisgarh it is cultivated by farmers. In the deep forest area it is also found as a wild crop. It is a very good anti oxidant, anti poison, anti inflammatory and used to treat skin diseases, urticaria, cough and diabetes. Many studies have been conducted to prove its immunomodulatory and anti-inflammatory effects.

Fulzele S. V. and coworker studied the **immunomodulatory effect** of Haridra. These scientists used Haridra Ghrita [poly herbal formulation] at the dose of 50, 100, 150 and 300mg/kg in male wistar albino rats. Significant increase in neutrophil adhesion was observed in a dose of 300mg/kg indicting the possible immunostimulant activity. [123]

Haridra with the combination of some other herbs; is beneficial in the treatment of **rheumatoid arthritis.** Kulkarni R. R. and coworker performed a randomized, double blind, placebo controlled, cross-over study on human subjects for the period of three months. There was a significant improvement observed in the grip strength in the patients taking treatment. [124]

Padhi et al studied the use of Haridra in the treatment of **diabetes mellitus**. He performed an open label study. He gave a combination of Haridra and amalki at the dose of 1gm/kg for the period of six weeks. Results showed good response in 45% of patients; a marked reduction in the random blood sugar level was observed. 38% patients showed fair response whereas 15% showed no response.[125]

[14] **Hingu**-[*Ferula foetida*] - Hingu consists of oleo-gum resin from rhizome and roots of *ferula foetida*. It is a perennial herb occurring in Persia and

Afghanistan. It is not cultivated in Chhattisgarh. But it is used by almost all herbal users of the state.

Agrawal A. K. and coworker studied the anti ulcerogenic activity of hingu. They found that it helps in the secretion of gastric juice and acid pepsin.[126]

[15] **Jatamansi-***[Nardostachys jatamansi*] - Jatamansi consists of dried rhizome of *Nardostachys jatamansi.* It is an erect perennial aromatic herb. In Chhattisgarh it is found in many places including tribal pocket of the state. It is digestive, carminative and nervine tonic. Used in insomnia and mental disorder.

Ethanol extract of the root jatamansi for its anti-convulsant activity was studied by vaidhya S. Rao and coworker. They found a significant reduction in the symptoms of mental illness on human subjects.[127]

Ramu M. G. and coworker studied the curative role of jatamansi for anxiety neurosis. A well designed study was conducted by these scientist and results were evaluated. There was positive change observed in the behavior of the patient.[128]

[16] **Kantakari-**[*Solanum surratense*] – Kantakari consists of mature dried whole plant of *Solanum surratense*. It is perennial prickly, diffused plant of waste lands and found throughout in the state. It is digestant and anti-inflammatory. It is commonly used to cure cough, fever, tastelessness and dysponea.

S. Govindan et al investigated the role of Kantakari for the treatment of mild to moderate **bronchial asthma.** Results of their study revealed that there was a marked improvement in the various biomedical tests of asthma. Patients also showed clinically relieved from some of the symptoms.[129]

Gupta P. P. et al also investigated the role of this herb in the treatment of **cough** and **bronchial asthma**. They used to give the decoction of Kantakari to 30 patients for one month. Thereafter they evaluated the patients for the recovery. The therapeutic response was assessed in two intervals (after 2 weeks and at the end of the study) in terms of grading scores dysponea, number and frequency of asthma attacks in a week and severity of asthmatic attack in 24 hours. All the patients showed significant improvement.[130]

[17] **Khajur-**[*Phoenix sylvestris*] – Khajur consists of deseeded dried fruits of *Phoenix sylvestris*. It is a tall tree upto36m high, cultivated of occasionally grown in arid parts of the state. It is used as a tonic as well for the treatment of hiccough, dysponea, fatigue, thirst, hemorrhages, and thisis.

A. A. Al-Qawari and coworker studied about the curative effects of Khajur on **gastric ulcer** in the rat models. The Ethanolic and aqueous extract of Khajura was given to the ethanol induced gastric ulcer rat models. Results of the study are quite astonishing. A fast recovery from this illness was recorded.[131]

[18**]** **Sallaki**-[*Boswellia serrata*] - Sallaki consists of exudates of *Boswellia serrata*. It is a moderate sized deciduous tree, up to 18 meter height. It is commonly found in dry forest of the state. It is commonly used in the treatment of rheumatoid arthritis and osteoarthritis. It acts as **immunomodulator** and **anti inflammatory.**

[19] **Lasuna** [*Allium sativum*] - Lasuna consists of bulb of *Allium sativum*. It is an important condiment crop of the state. Commonly it is used to cure chronic fever, cough, dysponea and hypercholestreamia .various study has been conducted to prove its above claims.

Banerjee sanjay kumar and coworker studied the **cardio protective** role of this herb. In their experiment they found that aqueous homogenate extract of Allium sativum was administered orally to wistar albino rats. He found that there was a marked improvement seen in the cardiac health of this rats.[132]

Saxena lata S. and coworker studied the **hypocholestreamic** and **hypolipidaemic** effect of lasuna. Lasun is found to be most significant protective effect on human body.[133]

Arora Ramesh et al studied the **hypochcolesterolemic** and **fibrinolysis enhancing effect** of lasuna. He worked on 30 proven cases of ischemic heart diseases. After the treatment of Lasuna for a period of 12 weeks the patients found a marked improvement in their condition.[134]

[20] **Mandukparni- [***Centella asiatica*] - It consists of dry whole plant of *Centella asiatica*. It is a perennial herb, commonly found as a weed crop in the field and other waste places throughout in the country. It is a carminative, cardio tonic, nervine tonic and used to cure cardiac debility, asthma, fever bronchitis and insomnia.

Gupta Y. K. and coworker studied the **anti-epileptic role** of Mandukparni. In a case controlled study the author opine that *Centella asiatica* may be used as adjuvant to **anti-epileptic drugs** as it has an added advantage of preventing cognitive impairment.[135]

Sharma Ajay Kumar was evaluated the role of Mandukparni in the control of minor disturbances in cerebral higher functions. He used to give 20 ml juice of Mandukparni thrice daily for the period of three months to the mental weakness. Then he evaluated the results. In this experiment he found that Centella asiatica showed significant improvement in mini mental state

test, anxiety level, and mental fatigue rate when compared to placebo treated group.[136]

[21] **Gudmar**-*[Gymnema sylvestre*] - Gudmar consists of dry leaves of *Gymnema sylvestre*. It is a large woody, much branched, climber. It is found in the state in dry forest. It is most commonly used in the treatment of diabetes, skin diseases, worms, wounds, dysurea and in heart ailments.

Bhaskaran S. et al [1990] worked on human beings to study the role of Gudmar in the treatment of **diabetes**. Results of his study showed that there was a significant reduction in fasting glucose in NIDDM patients. In type II diabetic patients, reduction in lipid level were observed.[137]

Shanmugasundaram E. R. B. and coworker [1990] studied the **anti-diabetic activity** of this herb on human subjects. He used GS4, the water soluble acidic fraction of an ethanol extract of the leaves of Gudmar at the dose of 400mg/day to 23 type II diabetics. Patients were 44-50 years of age and the duration of disease ranging from 2 to 30 months along with daily insulin injection. Results of this study were very hope full. Significant reduction was seen in fasting blood glucose, glycosylated haemoglobin and glycosylated plasma protein in GS4 treated group. Insulin doses was reduced to nearly half of the initial amount, while mean blood glucose was reduced from 232 to 152 ml/dl. The fasting C peptide levels were higher in GS4 treated group suggesting greater availability of endogenous insulin. Patients GS4 did not reported any adverse events. 5 patients reported sense of well being. [138]

[22] **Narikela** [*Cocos nucifera*] - It consists of dry endosperm of *Cocos nucifera*. It is a tall palm tree, cultivated in coastal and deltaic regions of south India. It is a very good diuretic and used in the treatment of bleeding disorders, thirst, burning sensation and colic disorders.

Mini S. and coworker [2004] showed the **hypocholestreamic** and **cardio protective** activity of Narikela in rats. [139]

Baheti A. M. and coworker [2006] studied the **diuretic effect** of Narikela in rats. In their study they found that after a controlled administration of this herb there was an increased output of urine along with sodium, potassium and chloride was recorded. This proves the diuretic action of Narikela.[140]

[23] **Nirgundi** [*Vitex negundo*] - Nirgundi consists of dried leaves of *Vitex negundo*. It is a small tree up to 5 m height, commonly found throughout in the country. This herb is used as anti-inflammatory and anti-poison drug.

P .R. C. Nair et al [1978] evaluated Nirgundi in the form of medicated oil, medicated ghee, decoction and guggulu for efficacy in 20 **sciatica** patients for the period of 45 days. He found 40% of patient showed marked relief, 40% showed complete relief and 20% patient showed mild relief.[141]

Ravishanker B. and coworker [1986] worked on different extracts of *vitex negundo* viz. petroleum ether, chloroform, and n-butanol and cold aqueous infusion. These were investigated for different pharmacological studies like anti-inflammatory, analgesic, antipsychotic anti- depressant, anti-parkinsonian and anti convulsant activity. He found marked success in his study.[142]

Gupta Malaya et al [1999] worked on the effect of this herb on **central nervous system**. In this experiment he used methanolic extract of vitex negundo leaves at a very specific dose levels. Methanol extracts significantly reduced touch response, pain response, writing reflex and grip strength in mice.[143]

Das B. and coworker [2003] proved the efficacy of Nirgundi tailam for the treatment of **osteo-arthritis**. These workers applied Nirgundi tailam

externally as well as orally to the patients. And found that marked improvement in 16.67% and moderate improvement in 41.67%.[144]

[24] **Pippali-** [*Piper longum*] - Pippali consists of dried, immature, catkin-like fruits with bracts of *Piper longum*. It is a slender, aromatic climber with woody roots mostly found in hotter parts of India. This herb is digestive, stomachic and expectorant. It is commonly used in the treatment of dysponea, cough and in diabetes.

Atal C.K. [1981] tested this herb for bioavaibility for vasicine and sparteine in experimental animals. Authors opined that Pippali increases the blood level of vasicine and sparteine.[145]

Agrawal A. K. and coworker [2000] studied about the **anti- ulcerogenic activity** of Pippali. He found significant anti ulcer effect in the experimental ulcer.[146]

Mehra P. S. and coworker [2001] tested this herb for the treatment of **diabetes**. In his experiment they found that **Pippali** *[piper longum*] when mixed with **Nimba** [*Azadirachta indica*] like in 1:2 ratio and given to the patient of diabetes [NIDDM] and result were observed in a fixed intermittent, there were a marked improvement seen in this patient. Symptoms of diabetes like poly urea, poly dipsia, poly phagia and weakness were significantly reduced.[147]

[25] **Punarnava**- [*Boerhaavia diffusa*] - Punarnava consists of dried, matured whole plant of *Boerhaavia diffusa*. It is a tralling, much branched herb with stout root stock found throughout in India. It is collected in rainy season. It is a diuretic, immunomodulator, cardio tonic and hepatoprotective tonic. It is used in the treatment of anaemia, fever, dysurea and in the disorders of liver and spleen.

Mudgal V. [1974] tested this herb for its **anti inflammatory** property on rats. He found that anti inflammatory action of root and leaf were significantly higher than whole plant and stem extract. Punarnava was also tested for its **diuretic effect.** The extract of leaves and roots showed significant diuretic effect compared to stem and whole plant.[148]

Rawat A. K. S. and coworker [1997] tested Punarnava for its **hepatoprotective activity** in rats. The result of this study showed that the percent of protection of liver is higher in aqueous form treated rats than the powder form treated animals. The plant collected in summer showed better hepatoprotective effect when compared with the plant collected in other season.[149]

Amaranth M. and coworker [2004] evaluated the aqueous extract of Punarnava for **anti oxidant** activity in liver and kidney of rats. He found the positive results in his experiment.[150]

Singh R. H. et al [1972] conducted a randomized, controlled study and evaluated for efficacy of Punarnava in **nephrotic syndrome** in comparison with modern treatment regime for nephritic syndrome including a diuretic and a corticosteroid, results of the study showed that Punarnava has induced a noticeable dieresis except for few cases. Overall improvement in albuminuria, increased in serum proteins was found. Out of 3 patients 2 were relieved and 1 improved in control group.[151]

[26] **Pushkara** [*Inula racemosa*] - Pushkara consists of dried roots of *Inula racemosa* found in western Himalaya up to an altitude of 2600 meters. It is commonly used for the treatment of hiccoughs, cough, dysponea, anaemia and fever. Certain studies have been conducted by the scientists to prove its medicinal properties.

Singh Ramji et al [1991] evaluated the **anti-anginal** and **hypolipidaemic** effect in 150 subjects of coronary heart diseases. They introduced a medicine called **Pushkara guggulu**, a combination of **Pushkara** [*inula racemosa*] and **guggulu [***Commiphora mukul*] in 1:1 proportion. At the dose of 6-8g/day in divided form for 6 month was evaluated for cholesterol lowering effect on human subjects. Significant reduction was noticed in total cholesterol, HDL and triglycerides from base line to end of the treatment. Out of 150 patients, complete relief in 38, marked relief in 69, moderate relief in 29 and mild improvement in 9 patients was observed, whereas 5 patients did not show any improvement. This study suggests efficacy of Pushkara and guggulu combination in CHD [coronary heart diseases] patients.[152]

[27] **Salparni** [*Desmodium gangeticum*] - Salparni consists of dried roots of *Desmodium gangeticum*. It is an erect under shrub 1.2 meter height. It is found in almost all parts of India especially in Western Ghats and plains in India. It is an excellent immunomodulator, anti poison and cardio tonic.

Ghosh D. et al [1961] studied the **anti inflammatory** effect of Gangetin isolated from Salparni. The experiment was done on animals and it has also been proved for **analgesic** and **anti pyretic effects**. Salparni in the doses of 50mg/ kg and 100mg/ kg orally administered for anti-inflammatory effect in albino rats against carregeenin induced paw oedema. Both the doses showed anti inflammatory results in mice.[153]

Govindrajan Raghavan et al [2006] studied the **anti- oxidant** effect of this herb by using an alcoholic extract of Salparni in rats. A significant improvement in the condition of the rats was observed.[154]

Dharmani Poonam and coworker [2005] studied the **anti-ulcer** activity of this herb. She studied on rats and found the positive improvement in the condition of ulcer in these rats. [155]

Ghosh D. and coworker [1961] studied the **hypochcolesterolemic** and **anti-oxidant** effect of aqueous extract of Salparni on isoproterenol induced myocardial infracted rats. The hypocholestreamic effect of Salparni was assessed by concentration of total cholesterol, low density lipoprotein cholesterol, and through the activities of 3-methyl glutaryl co-enzyme reductase and lecithin cholesterol acyltransferase in the myocardial tissue. In their observation they found that there is a significant positive change at all angle of their results.[156]

[28] **Sarpagandha** – [*Rauwolfia serpentina*] Rauwolfia serpentina consists of air dried roots of *Rauwolfia serpentina*. It is a perennial, undershrub widely distributed in India. It is also found in sub-Himalayan tracts up to 1000 m as well as lower ranges of the Eastern and Western ghats. In Chhattisgarh it is cultivated for medicinal use. It is commonly used for the treatment of Hypertension and Insomnia.

Misra Radha Kanta et al [1999] studied about a poly herbal combination in which *Bacopa monnieri* 200 mg, *Acorus calamous* 100 mg, *Saussurea lappa* 100mg, *Rauwolfia serpentina* 100mg, *Nardostachys jatamansi* 100mg, *Valerriana wallichi 100mg* was present. They studied the **anti-hypertensive** effect in an open label case control study. Marked improvement was seen in the patient of hypertension. Results of their study was well prove the **anti hypertensive** effect of this herb.[157]

[29] **Satavari** [*Asparagus racemosus*] – Satavari consists of tuberous roots of *Asparagus racemosus*. It is an ascending, spinous mush branched, perennial climber; found throughout in the country. It is a very strong cardiac-tonic and immunomodulator and used as a tonic.

Nirmala N. Rege [1999] studied about the protective effect of this herb for the ulcer, in some rats. In her experiment she found that in the

experimental animals pretreated with Asparagus racemosus, the incidence of ulcer index was lower. [158]

Nirmala N. Rege et al [1999] was also studied the **anti-stress** activity of this herb. She found that Satawari significantly reduces stress induced leakage.[159]

Visavadia N. P. and coworker [2005] studied the **hypocholestreamic** and **anti-oxidant** activity of this herb. Satawari at the dose of 5mg/ kg has significantly reduced total lipid, total cholesterol, LDL, triglycerides level and increased HDL level.[160]

Singh K. P. et al evaluated satavari for **anti-ulcer** property in 32 patients with proven duodenal ulcer by radiographic and endoscopic evidence. Satavari root powder at the dose of 12 g daily in four divided doses was administered for a period of 6 weeks. Trial was assessed in terms of relief; reduction in gastric acidity response both augmented histamine test and fractional test meal as well as radiological and endoscopic changes. Results showed that 93.3% got improvement in abdominal pain. 46.15% patients who showed complete healing and 25% showed partial healing.[161]

[30**]** **Sunti** *[Zingiber officinale*] - Sunti consists of dried rhizomes of *Zingiber officinale*. It is widely cultivated in India. It has digestive, carminative, anti oxidant and anti hypercholestermic properties.

Viswakarma S. L. [2002] investigated Sunti for various CNS [central nervous system] activities in rats.[162]

[31] **Tulsi** [Ocimum sanctum] – Tulsi consists of whole plant of *Ocimum sanctum*. It is an erect, much branched, and annual found throughout in India. It is digestive, stomachic, expectorant and anti-stress. Most commonly used in cough, dysponea and in malaria.

Mediratta P. K. and coworker [2002] evaluated the **immunomodulator** activity of Tulsi.[163]

Lakshmi K. J. and coworker studied the anti- stress activity of Tulsi in the people of 60 to 80 years. Tulsi has shown significant improvement in **biological age score** and **anxiety score**.[164]

[32] **Vidari kanda**– [*Pueraria tuberosa*] - Vidarikanda consists of dried tubers of *Pueraria tuberosa*. It is a large perennial climber with tuberous roots. It is found in throughout in the country in deciduous forest. In Chhattisgarh it is known as ***Patal konhara.*** It is a very good tonic and a strong immunomodulator and generally used in bleeding disorders.

Shukla sangeeta and coworker [1987] investigated the potent estrogenic activity of Vidari kanda in adult rats.[165]

[33] **Yashtimadhu** [*Glycyrrhiza glabra*] - It consists of dried unpeeled roots of *Glycyrrhiza glabra*. Commonly used in cough and bronchitis. Clinical and experimental studier of this herb is not predominantly found.

Chapter II Cited references

[Bibliography / Webography]

1. **Dr. Xiaorui zhang, (2000) WHO Annual report, (2000)"**Traditional Medicine and its Knowledge", UNCTAD Expert Meeting on" System and National Experiences for Protecting Traditional Knowledge, Innovations and Practices" Traditional Medicine (TRM), Department of Essential Drugs Medicines policy. **W. H. O. Geneva. Switzerland.**
   www.conserafrica.org/medicinal/plants.rt.f
   (2/ w) www.conserafrica.org/medicinal/plants.rt.f

2. **Titilayo, O. Fakeye, Rassag Adisa. (2009).** "Attitude and use of herbal medicines among pregnant women in Nigeria" *Complementary and Alternative Medicine*.
   www.biomedcentral.com/1472-6882/9/53.

3. **Giday, M. Asfaw, Z. Woldu, Z. Teklehaynanot, T. (2009)"**Medicinal plant knowledge of the *Bench ethnic group* of Ethopia:ethnobotanical investigation". ***Journal of Ethnobiology and Ethnomedicine***, 2009 Nov 131:5:34.
   PMID: 19912633.

4. **Pieroni, A. Glusti, M.E. (2009) "**Alpine ethno botany in Itly: traditional knowledge of gastronormic and medicinal plants among the occitants of the upper Varaita valley, Piedmont; *J* ***Ethnobiol Ethnomed*** 2009 Nov 6; 5; 32. **PMID: 19895681.**

5. **Leporatti, M.L. Ghedira, K. (2009) "C**omparative analysis of medicinal plants used in traditional medicine in Itly and Tunisia". (2009). Oct**.** ***JEthnobiol. Ethnomed.***
   PMID: 19857257.

6. **Stephen, Bent. (2008) "**Herbal medicine in united states: Review of Efficacy Safety and Regulation": ***Journal of General internal Medicine*** 2008 June; **23(6): 854-859.**
   PMID: PMC 2517879.

7. **Della, A. Forster, Angela Denning, Gemma Wills, Melissa Bolger and Elizabeth Mc Carthy.(2006).**
   PMCID, PMC 1544352.

8. Toledo, B. A. Galetto, L. Colantonios, (2009) " Ethnobotanical knowledge in rural communities of Cordoba (Argentina): The importance of cultural and biogeographical factors. (2009*). J* ***Ethnobiol Ethnomed*** 2009 Dec. **PMID: 20003502.**

9. Alexandros, S. Batsarus (2007) "Plants used traditionally to treat malaria in Brazil, the archives of flora medicinal": ***Journal of Ethnobiology and Ethnomedicine*** 2007;3.18 **PMCID: PMC 1891273.**

10. Tabuti, J. R. Lye, K. A. Dhillon S S, (2003) "Traditional herbal drugs of Bulamogi, Uganda: Plants, use and administration. (2003) Sep; 88(1) : 19-44. **PMID: 12902048.**

11. Rainer, W. Bussmann and Douglas Sharon, (2006) "Traditional medicinal plants uses in Loja province, Southern Ecuador; (2006) **2:44** **PMCID; PMC 1615866.**

12. Bussmamn, R.W. Glenn, A. Meyer, K. Kuhlmn, A. Townesmith, A. (2010) "Herbal mixture in traditional medicine in Northern Peru". 2010 Mar 14:6(1):10 ***J of Ethnobiol Ethnomed.*** **PMID: 20226092.**

13. De, Sousa. Araujo, T.A. Alencar, N.L. De, Amorim, E.L, de Albuquerque U.P. (2008) "A new approach to study medicinal plants with tannins and flavonoids content from the local knowledge." ***J Ethnopharmacol***, 2008 Oct 30; 120 (1): 72-80. **PMID: 18725282.**

14. Jouad, H. Haloui, M. Rhioueni, H. EiHilaly, J. Eddiuks, M. (2001) "Ethnobotanical survey of medicinal plants used for the treatment of diabetes, cardiac and renal diseases in the North Center Region of Morocco**, J Ethnopharmacol, 2001 oct:77 (2-3) 175-85.** **PMID: 11535361.**

15. Signorini, M.A. Piredda, M. Bruschi, P. (2004-2005) "Plants and traditional knowledge- an ethnobotanical investigation on Monte Ortobene, Nuoro, Sardinia", ***J Ethnobiol Ethnomed.*** 2009 Feb 10; 5:6**.** **PMID: 19208227.**

16. Long, C. Lis, Long B. Shi Y, Liv B, (1999-2002) "Medicinal plants used by Yi ethnic group: A case study in central Yunnan". (1999-2002),***J Ethnobiol Ethnomed*. **(2009), April23:5:**
PMID: 19389251.

17. Zheng, X.L. Xing, F.W. (2009) "Ethnobotanical study on medicinal plants around Mt. Yinggeling, Hainan Island, China". (2009).Jul 15; 124 (2): 197-210.
PMID: 19409476.

18. Liu, Y. Daoz, C. Lioy, Long C. (2006) "Medicinal plants used by Tibetans in Shangri-la, Yunnan, China" (2006), ***JEthnobiol Ethnomed*.** 2009 May 5:5:15.
PMID: 19416515.

19. Quinlan, M.B. (2010) "Ethnomedicine and Ethnobotany **of** fright, a Caribbean culture-bound psychiatric syndrome", (2001); ***J Ethnobiol Ethnomed,*** Feb 17; **6 (1):9**
PMID: 20163730.

20. De. Boer, H. and Lamxay, V. (2009) "plants used during pregnancy, child birth and post partum health care in Lao PDR: a comparative study of the Brou, Sack and Kry ethnic group" **(2009);** ***J Ethnobiol Ethnomed,*** 2009 Sep 8; 5:25.
PMID: 19737413.

21. Teklehaymanot, T. (2009) "Ethnobotanical study of knowledge and medicinal plants use by people in Dek Island in Ethopia" ***J Ethnopharmacol.***2009 July 6; 124 (1):67-78
PMID: 19477609.

22. Moshi, M.J. Otieno, D.K. Mbabazi P.K. Wseisheit A, (2009)."The ethnomedicine of the Haya people of Bugabo Ward, Kagera Region, North Western Tanzania" ***J ethnobiol Ethnomed*** August 31;5: 24.

23. Jacqueline, S. Marinac, Pharm, D. Colleen L, Buchinger, MD, (2007) "Prevalence of herbal medicine among Americans" ***J of American Orthopedic Association*. Vol.107.** No 1 January 2007. 13-23.

24. David, M. Eisenberg, Ronald C. Kessler, Cindy Foster, Frances E. Norlock, David, R. Calkins, Thomas, I. Delbancco, (1993)."Unconventional **Medicine** in United States- Prevalence, Cost and Pattern of use"***The New England Journal of Medicine;*** vol 323: 246-252, Jan 28, 1993 Number 4.

25. Yumi, E. Satow, Praveena, D. Kumar, Adam B-urke and Johnn, F. Inciardi, (2008) "Exploring the Prevalence of Ayurveda Use Among Asian Indians" ***The Journal of Alternative and Complementary Medicine*"** Dec 2008, 14 (10): 1249-1253.

26. Jacqueline, S. Marinac, Pharm, D. Collecn, L. (2007) "Herbal products and dietary supplements: A survey of use of ,Attitudesand knowledge Among Older Adults". ***J of Orthopedic Association,*** vol 107, No 1, January 2007. Pp13- 23.

27. Moskalenko, S. A. (1987) "Slavic ethnomedicine in the Soviet for East" Part I Herbal remedies among Russians/Ukrainians in the Sukhodol Valley, Primorye. ***Journal of Ethnopharmocology,*** volume 21, Issue 3, December 1987,Pages 231-251.

28. Ibrahim, J.A. Muazzam, I.A. Kunlae, J. Okogun, (2007) "Ethnomedicinal Plants and Methods used by Gwandara Tribe of Sabo Wuse in Niger State, Nigeria, To Treat Mental Illness". ***Afr. J. Traditional, Complementary and Alternative Medicines***. (2007) 4 (2): 211-218.

29. Titilayo, O. Fakeye, Rasag Adisa, Ismail, E. Musa, (2009) "Attitude and use of herbal medicines among pregnant women in Nigeria", BMC Complementary and Alternative Medicine. 2009, 9: 53. Available at http// www.biomedcentral .com.

30. L**awal, I. Q. Uzokwe, N.E. Ladipo, D.O. Asinwa, J.O. and Igboanugo, A.BI, (2009) "E**thnophytotherapeutic information for the treatment of high blood pressure among the people of Ilugun, Ilugunarea of Ogun State, South-West Nigeria". ***African journal of pharmacy and pharmacology.*** Vol 3 (4). Pp 222-226, May'2009. Available at http://www.academicjournals.org/ajpp.

31. Ripu, N. Kunwar, Bal, K. Nepal, Hari, B. Kshhetri, Sanjeov, K. Rai, and Rainer w. Bussmann, (2006) "Ethnomedicine in Himalaya: A case study from Dolpa, Humla, Jumls and Mustang district of Nepal. ***J of Ethnobiology and Ethnomedicine*** 2006, 2:27.

32. Kunwar, R.M. Bussmann, R.W. (2008) "Ethnobotany in Nepal Himalaya"J of Ethnobiol Ethnomed. **2008, Dec 2;4:24.** Available at htt:// www.ncbi.nlm.nih.gov/Pubmed.

33. Uprety, Y. Asselin, H. Boon, E.K. Yadav, S. Shrestha, K.K. (2010) "Indigenous use and bio-efficacy of medicinal palnts in Rusuwa Dstrict, Central

Nepal. *J Ethnobiology and Ethnomedicine 2010.* **Jan 26,6:3. PMID 20102631.**

34. Witt, C.M. Berling, N.E. Rinpoche, N.T. Cuomom, Willich, S.N. (2009) "Evaluation of medicinal plants as part of Tibetan medicine prospective: observational study in Sikkim and Nepal". ***J Altern Complement Med*, 2009 Jan; 15 (1): 59-85.**

35. A**rshad Mehmood Abbasi, Mir Ajab Khan, Mushtaq Ahmad, Rahatullah qureshi,(2010).**"Ethnobotanical study of wound healing herbs among the tribal communities in Northern Himalaya Ranges District Abbottabad, Pakistan" ***Pak. J. Bot.*, 42(6): 3747-3753, 2010.**

36. Biswas Animesh, (2010)."Inherited folk pharmaceutical knowledge of Tribal people in the Chittagong Hill Tracts, Bangladesh" ***Indian Journal of Traditional Knowledge.*** Vol 9(1) 77-89 Jan 2010.

37. Prasad, P.R. Reddy, C.S. Raza, S.H. Dutt, C.B. (2008) "Folklore medicinal plants of North Andaman Island, India".***Fitoterapia,*** 2008, Sep, 79(6): 458-64.

38. Vidysagar, G.M. P. Prashant Kumar, (2006) "Traditional herbal remedies for gynecological disorders of women of Bidar District of Karnataka, India, ***Fitoterapia, 2007 Jan 78(1): 48-51* .PMID 17070657**

39. Harsha, V.H. Hebbrss, S.S. Hegede, G.R. Shripathi, V. (2002) "Ethnomedical knowledge of plants used by Kunabi Tribe of Karnataka in India. ***Fitoterapia*** 2002, July, 73 (4): 281-7.

40. N. Rajkumar, M.B. Shivanna. (2008) "Traditonal medicinal knowledge in Sagar tulak in Shimoga District Karnataka." ***Indian Journal of Natural Products anResources,*** vol. 1 (1) 2010, 102 108.

41. Savarimuthu, S. Ignacimuthu, M. Ayyanar. (2005) "Ethnobotanical investigations among tribes in Madurai district of India. " ***Journal of EthmobiologyEthnomedicine,***2006 2:25. **http://www.ethnobiomed.com/content2/1/25**.

42. C.Alagesa Boopathi. (2009) "Ethnomedicinal plants and their utilization by villagers in Kumaragiri Hills of Salem District of Tamilnadu, India" ***Afr. J Trad. CAM***(2009) 6(**3**): 222-227.

43. Ignacimuthu, S. Aryanar, M. Sankarasivaraman. (2008) "Ethnomedicinal study of medicinal plants used by *Paliyar tribes* in Theni district of Tamilnadu, India."***Fitoterapia*** 2008,Dec; 79 (7-8)562-68. **PMID 18678232.**

44. Vatsavaya, S. Raju, Reddy, K.N. (2005) "Ethnomedicine for dysentery and diarrhoea from Khammann district of Audra India". ***Indian journal of traditional knowledge*** vol 4(4) oct. 2005, p443-339.

45. C. Sudhakar Reddy, K. N. Reddy, Chranjibi Pattanaik, (2007) "Ethnomedicinal studies on Medicinal Plants used by Chenchus of Nallamalais in Kurnool District, AP, India". ***Research Journal of Medicinal Plants***1 (4): 128-133, 2007.

46. Vankata, S.B. Ratnamk, Reddy, K. Reddy, Tirupati G, (2010) "Herbal remedies for eye infections used by the tribal of Nallamala Forests, Andhra Pradesh"**.** ***IJTK*** Vol 09(4) , Oct 2010.

47. Kosalge, S.B. Fursule, R.A. (2009) "Investigation of Ethnomedicinal Claims of some Plants used by the tribal of Satpuda Hills, India". ***J Ethnopharmocology***, 2009,Jan 30; 121(3): 456-61.

48. Titali, P. Waghchaure, C. Daswani, P.G. Anita, N.H. Birdi, T.J. (2009) "Ethnomedicinal survey of anti-diarrhoeal plants of Parinche Valley, Pune district (Maharashtra). India**.** ***J Ethnopharmocology*** 2009 Jun 22; 123(2): 229-36.

49. Jagtap, S.D. Deokule, S.S. Pawar, P.K. Harsulkar, A.M. (2009) "Traditional Ethnomedicinal Knowledge comfined to the Pawara Tribe of Satpura Hills, Maharashtra**.** ***Ethnomedicinal Leaflets*** 13: 98-115, 2009.

50. Baheti, A.M. Jain, S.R. Khandelwal, K.R. (2010)"Use of medicinal plants among the tribes of Satpura region of Dule and Jalgaon district of Maharashtra- An Ethnobotanical Survey**"** ***IJTK*** vol 09(1): Jan 2010.

51. Kantamreddy, V.S. Parida, S. Kommula, S.M. Wright, C.W. (2009) "Phytotherapy used In Orissa state India for treating malaria." ***Phyther Res*** 2009 Nov; 23(11): 1638-41.

52. Raut, S.D. Thatoi, H.N. (2009) "Ethnomedicinal practice of Kol tribes in Similipal Biosphere Reserve, Orissa", India. ***Ethnobotanical leaflets*** 13: 379-87.2009.

53. Sen, S.K. Sahu, P. Behera, L.M. (2010) "Effect of Peryularia deamia chiov. Leaf latex in the treatment of Jaundice at Bargarh district in Orissa"**.** ***IJTK*** Vol 09(4): Oct 2010.

54. Raut, S.D. Panda, S.K. (2010) "Ethnomedicinal Plant Resources of Mayurbhanj district of Orissa."***IJTK*** Vol 09(1): Jan 2010.

55. Tiwari, D.K. Yadav, A. (2003) "Ethnomedicinal investigation of some medicinal plants availed by Gond Tribes of Natradehi Wild Life Sanctuary" . M.P. ***Anthropologist,*** 5(3): 201202 (2003).

56. Raj Ravi, (2003) '"Studies on Indigenous Herbal Remedies in cure of fever by Tribals of M. P". IJTK Vol 09(1): Jan 2010.

57. Jain Ashok, Valrale Mohan, G. Singh, Rajet. (2010) "Folklore claims on some medicinal plants used by Bhil Tribe of Guna district of M. P**"** ***IJTK*** Vol09 (1): Jan, 2010.

58. Upadhyay, B. Paarveen, Roy, S. Kumar, A. (2007) "Traditional uses of medicinal plants among the rural communities of Churu district in the Thar Dessert, India. J of Ehnopharmocology, 2007 Sep 25; 113(3): 387-99. **PMID 17714898.**

59. Meena, K.L. Yadav, B.L. (2007) "Some Ethnomedicinal Plants of Southern Rajasthan"**.** ***IJTK*** Vol 09**(1)**Jan 2010.

60: Chaudhary, K. Singh, M. Pillai, U, (2008)"Ethnomedicinal survey of Rajsthan-An update"**.** ***American Eurasian J of Botany.*** 1(2):38- 45, 2008.

61: Abdul viqar Khan, Athar Ali Khan, (2008). Ethnomedicinal uses of *Eclipta prostrta* **.** ***IJTK*** Vol 17(2)April 2008, pp316-320.

62: Abdul viqar Khan, Athar Ali Khan, (2002)."Ethnomedicinal uses of *Achyranthes aspera* Lin. management of Gynecological disorders". http:/wwwsiu,edu/~ebl/leaflets achyrant.htm.

63: Singh, A. Singh, P. (2009) "An Ethnobotanical study of medicinal plants in Chandauli District of Utterpradesh, India". ***J Ethnopharmacol***, 2009 Jan 21; 121(2):324-29. **PMID 19022368.**

64: Verma, A.K. Kumar, M. Bussmann, R.W. (2007) "Medicinal plants in as urban environment: The medicinal flora of Banaras Hindu University, Varanasi, U. P." ***J Ethnobiol Ethnomed*** 2007 Nov 8; 3:35. **PMID 17996050.**

65: Jyotsana, R.M. Painulia, Gour, R.D. (2010) "Plants used by the rural community of district shahjahanpur U.P"**.** ***IJTK*** Vol 09(4) Oct 2010.

66: Himanghu, Bikash Das, Kaushik Majumdar, Dutta B. K. Debadid R.(2008) "Ethnomedicinal uses of some plants by *Tripuri* and *Reang* Tribes of Tripura". ***Natural Products Radiance*** Vol 8(20 2009, pp 178-180.

67: Sajem, A. L. Ghosal, K. (2006) " Traditional use of Medicinal Plants by *Jantia* Tribes in North Cachar Hills district of Assam, North-East India" ***Journal of Ethnobiol Ethnomed***, 2006, Aug 9:2:44.

68: **Pamuli, P. Sharmap (2010) "** Ethnomedicobotany of the Dimasa Kcchari of North Cachar Hills district of Assam" ***IJTK*** Vol. 09 (4) Oct 2010.

69: Namsa, N.D. Tag, H. Mandal, M. Kalita, P. Das, A.K. (2009) "An Ethnobotanical study of Traditional Anti-inflammatory Plants used by the Lohit Community of Arunachal Pradesh, India "***J of Ethnopharmocol*** 2009, Sep 7;125 (2): 234-45 .**PMID 19607898.**

70: Kagyung, R. Gujurel, P.R. Rothy, P. singh, B. (2005) "*IJTK*** Vol 09 (3) July 2010.

71: **Jamir, N.S. Takatemjen, /limasemba (2010).** "Traditional Knowledge of Lotha Naga Tribes in Wokha district , Nagaland**"** ***IJTK*** Vol 09 (10 Jan 2010.

72: **Kala, C.P. (2005)** "Ethnomedicinal botany of the Apatani in the Eastern Himalaya Region of India" ***J Ethnobiol Ethnopharmacol***, Nov, 16:1:11

73: Singh, K.N. Lal, B.(2008) "Ethno medicines used against four communicable ailments by the tribal communities of Lahaut Spiti in Western Himalaya" ***J Ethno Pharmoco***l, Jan 4; 115(1) 147-59.**PMID 17980527.**

74: Hynnewta, S.R. Kumar, Y. (2010) "The lesser known medicine ka Dawai-Niangsopet of thd Kihasis in Meghalaya, North East India**"** ***IJTK*** Vol 09 (30 July 2010.

75: Prakash Vipin, Agrawal, Ashok, (2010) "Traditional uses of ethmonedicinal plants of lower foothills of Himachal Pradesh-1**"** ***IJTKvol*** 09 (4) Oct 2010.

76: **Tiwari Lalit, Pande P.C. (2010)** "Ethnoveterinary medicines in Indian Perspective; Reference to Uttrakhand Himalaya" ***IJTK*** Vol 09 (3) July 2010

77: **Semwal, D.P. Saradhi, P. Pardha, Kala, C.P. (2010) "**Medicinal plants used by Ukhimath block, Uttrakhand", IJTK Vol 09(3) July 2010.

78: Kumar Jyoti, Mairth, Arundhati, (2010) "Traditional Botanical Wisdom of *Birhor Tribes* of Jharkand, IJTK Vol 09(3), July 2010.

79: Punjari Bhaskar, (2010) "Herbal Folk Medicine used for Urinary Complaints in Tribal pockets of North East Gujrat,"***IJTK*** Vol 09(1) Jan 2010.

80: M. D. Ajitabai, Shredevi S, Vishwanathan, P.K. "Ethnobotanical survey of plants used in treatment of diabetes**.** ***IJTK*** Vol 09(1) Jan 2010.

81: Hemla Aggarawal, Nidhi kotwal "Food used as Ethnomedicine in Jammu" ***Ethnomed, 3(1):*** 65-68 (2009).

82: Janifer Raj, G. Phani Kumar, Gupta Sunil Singh, Shashi Bala. (2009). "Phyto foods of Nubra Valley, Ladakh- The cold dessert" ***Ethnomed,*** 3(1):

83: **Kala, C.P. (2009)** "Aboriginal uses and management of Ethnobotanical species in deciduous forests of C. G. in India. "***J of Ethnobiol Ethnomed***, 2009 Aug, 4:5:20.
PMID 19653889.

84: Shukla Rajesh, Chakravarty Moyana, Gautam M. P. (2008) "Indigenous medicine used for treatment of gynecological disorders by Tribal of Chhattisgarh" ***Journal of Medicinal Plants Research*** Vol. 2(12); pp356-360. 2008.

85: Pati, R. N. (2002) "Ethnomedicinal practices and sustainable development; sensitive issue in Economic Transformation in C. G " ***Proceedings of conference on Indigenous knowledge*** 2004.

86: Tirky Amita, (2006) "Some Ethnomedicinal plants of family Fabaceae of Chhattisgarh state". *Indian Journal of Traditional Knowledge*, Vol.5 (4) Oct 2006, pp551-553.

87: Nirmala N. Rege, Urmila M.Thatte, Sharadani A.Dahanukar, **(1999)** " Adaptogenic properties of Six Rasayana herbs used in Ayurvedic Medicin"e, ***Phytotherapy Research,*** Vol. 13, 275-291, 87.

88: M.M. Padhi, (1998) "Nisamalaki in Madhumeha (DM): A clinical study", ***Journal of Research in Ayurveda and Siddha,*** Vol. XIX, issue 1-2, 34-4088.

89: Rajak, S. Banerjee, S. Sood, S. (2004) "*Emblica officinalis* causes mycirdiat adaptation and procts against oxidative stress in ischemic reper fusion in ischamin rats" ***Phytotherapy research***, vol 18, issue 1, page 54-60 January 2004.

90: Viswanath Ankad, Ajay Kumar Sharma; (2002) "Clinical evaluation of Rasayana Prabhava of Amalaki Rasayana, ***Journal of Research in Ayurveda and Siddha***, Vol. XXIII, issue 3-4, 22-38, (90).

91: R. Gupta, Shalini Singhal, Anuradha Goyal, V.N. Sharma, (2001) "Antioxidant and Hypocholesterolaemic effects of Terminalia arjuna tree-bark powder: A randomized, placebo- controlled trial, ***Journal of Association of Physicians of India,*** Vol. 49, 231-235, (91).

92: Chandrasekhar Rao, R.H. Singh, "Effect of Terminalia arjuna W&A on regression of Left Ventricular Failure hypertension – A clinical Study", ***Journal of Research in Ayurveda and Siddha,*** Vol. XXII, No. 3-4, 216-227, 2001) (92)

93: Leemol Davis, Girija Kuttan, (2000) "Immunomodulatory activity of Withania sominifera"., ***Journal of Ethnopharmacology,*** Vol. 71, 193-200, (93)

94: Mohammed Ziauddin, Neeta Phansalkar., (**1996)** "Studies on the immunomodulatory effects of Ashwagandha", ***Journal of Ethnopharacology,*** Vol.50, 69-76, (94)

95: Dwivedi, K.K. Agarwal, Sudhir Singh, **R.H. (2001). "**A study of psychiatric symptoms of geriatric patients and the response to Ayruvedic therapy", ***Journal of Research in Ayurveda and Siddha***, Vol. XXII, Issue 3-4, 198-207,.(95)

96: Singh, R.H. Malviya, P.C. (1978) "Studies on the psychotropic effect of an indigenous rasayana drug Aswangandha (Withania somnifera) Part-I, Clinical studies" ***Journal of Research in Indian Medicine***, Yoga & Homoeopathy, Vol. 13, (1), 14-24, (96)

97: Annie Shirwaikar, Salemulla Khan, S.Malini, (2003) "Antiosteoporotic effect of ethanol extract of Cissus quadrangularis Linn. On ovariectomised rat", Journal of Ethnopharamacology, Vol. 89, 245-250, (97)

98: D.K. Deka, L.C. Lahon, J.Saikia, A. Mukit,(1994). "Effect of Cissus quadrangularis in accelerating healing process of experimentally fractured raidus-ulna of dog: a preliminary study", ***Indian Journal of Pharmacology***, Vol. 26, 44-45, (98)

99: Panda, M. (1999) "The effect of Lakshadi Guggulu in the clinical management of fractures"; ***Journal of Research in Ayurveda and Siddha,*** Vol. XI, No. 1-2, 7-19, (99)

100: Gupta, S.S. Verma, S.C.L. (1972) "Diuretic effect of saponin of Achyranthes aspera", ***Indian Journal of Pharmacology***, Vol. 4(4), 208-214, (100)

101: **N.C. Neogi, R.S. Rathor, "**Studies on the anti inflammatory and antiarthritic activity of achyranthine**", *Indian Journal of Pharmacology***, Vol.1, 37-47, 1969

102: **A.K. Khanna, R. Chander, C.Singh, A.K. Srivastava, N.K. Kapoor.,** Hypolipidemic activity of Achyranthes aspera Linn. In normal and

triton –induced hyperlipidaemic rats, ***Indian Journal of Experimental Biology***, Vol.30, 128-130, 1992)

103: A. Suresh, T.Anandan, G.Sivanandam, G.Veluchamy,(1985) **"**Apilot study of Naayuruvi Kuzhi Thailam in Eraippunoi Bronchial asthma"***Journal of Research in Ayurveda and Siddha;*** Vol.6, 171-176.

104: **Steven Roodenrys** (2002)," Chronic effects of Brahmi (Bacopa monnieri) on Human memory, ***Neuropsychopharmacology,*** Vol. 27, No.2, 279- 281 2001.

105: Aruna Agrawal, G.P. Dubey, B.S. Gupta, (1990), "Role of and Ayurvedic Bramhi Brahmi (Bacopa monnieri in the management of senile dementia", ***Pharmacopsychocologia,*** Vol.3, 47-52, 1990.

106: E.M. Franzotti, C.V.F.Santos, H.M.S.L Rodigues (2000). "Anti inflammatory, analgesic activity and Acute toxicity of *Sida cordifolia* (Malva-branca)"; ***Journal of Ethnopharmacology***, Vol. 72, 273-278, 2000.

107: M.G. Ramu, N.Janakiramaiah (1982). "Kshiradhara in Anxiety Neurosis (Chittodvega): A pilot study**", *Journal of Research in Ayurveda and Siddha,*** Vol. III, No. 3 & 4, 126-132, 1982.

108: Nirmala N. Rege, Urmila M.Thatte, Sharadani A.Dahanukar,(1999). "Adaptogenic properties of Six Rasayana herbs used in Ayurvedic Medicine", ***Phytotherapy Research***, Vol. 13, 275-291, 1999.

109: Nirmala N.Rege, Urmila M. Thatte, Sharadani A.Dahanukar, (**1999)** "Adaptogenic properties of Six Rasayana herbs used in Ayurvedic Medicine", ***Phytotherapy Research***, Vol.13, 275-291, 1999.

110: **Dash, A. (2000),"**stimulation of nitric oxide synthesis by tinospora cordifolio in alveolar macrophages and its implications in patient with T.B, present" ***at 33rd annual conference of the Indian pharmacological society***, Gandhi nagar, India, December 28 – 30, 2000.

111: **Prem kishor, pandey, (1980).** "Role of sunti Guduchi in the treatment of amavata – rheumatoid arthritis", ***Journal of research in Ayerveda and Siddha,*** Vol. 1, 417 – 428, 1980)

112: **P.S. Mehra, R.H. Singh**, **(2001)** "clinical evaluation of the effect of amrita Pippali nimbi yoga in diabetes metitus with special reference to the role of Agni and ojas" ***Journal of research in Ayurveda and siddha***, Vol. XXII, no. 3 -4, 183 – 197, 2001)

113: **Soumen Banarjee, Arati mukherjee et al.(1998)** "Preliminary studies on the anti-inflammatory effects of ricinus communis", ***Indian journal of pharmacology,*** vol. 22, 239 – 244.

114: **M. srinivasulu**, "Role of virechana karma in amavata by gnadharva hastadi kvatha", ***Journal of research in Ayurveda and Siddha*** , Vol. 19, 3 -4, 132 – 138.

115: **M.R. Heidari, M. mehrabani et al**, **(2007) "**The analgesic effect of tribulus terrestris extract and comparison of gastric ulcerogenicity of the extract with in – domethacin in animal experiments", ***Annals of New York Academy of Sciences***, 1095, 418 – 427.

116: **Munner, A.L. Ali, salman wahbi. (2003) "**Tribulus terrestries: Preliminary study of its diuretic and conractiles effect and comparison with zea mays", ***Journal of Ethnopharmacology***, Vol. 85, 257 – 260.

117: **G.V. Satyavati, C. Dwarakanath, S.N tripathi, (1969)** "Experimental study on the hypocholesterolemic effect of commiphora mukul Engl. (guggulu)" ***Indian journal of medical research,*** Vol. 57, 10, 1950 – 1962, October .

118: **S.C. Malhotra, M.M. Ahuja, K.R. sundaram**, (1997) "Long term clinical studies on the hypolipidaemic effect of commiphora mukul (Guggulu) and clofirbrate", ***Indian journal of medical research,*** Vol. 65,3, 390 – 395, march 1997.

119: **Prakash Paranjee, Pralhad Patki, Bhushan Patwardhan**, **(1990)** "Ayurvedic treatment of obesity: A randomized, double blind, placebo controlled clinical trial", ***journal of Ethnopharmacology***, Vol. 29, 1 -11,

120: **S. Suchalatha, C.S. shymala devi**, **(2004)** "Protective effect of terminilia chebula against experimental myocardial induced isoprotenol", ***Indian journal of Experimental Biology,*** Vol. 42, issue. 2, 174 – 178.

121: **Nirmala N. rage, Urmilla M. thatte, sharadani A. Dahanukar**, **(1999)** "Adaptogenic properties of six rasayana herbs used in Ayurvedic Medicine", ***physiotherapy research***, Vol. 13, 275 – 291.

122: **A.K. Singh, M. Sahu, N. Shrikanth**, **(2001)** "Effect of the Ayurvedic compound drug triphala Guggulu in diabetic retinopathy", ***Journal of research in Ayurvedic and Siddha***, Vol. XXII, no. 3 – 4, 208 – 215.

123: **S.V. Fulzele, P.M. Satturwar, S.B. Joshi, A.K. Dorle, (2003)** "Study of the immunomodulatory activity of haridradi ghirta in rats", ***Indian journal of pharmacology,*** Vol. 35, 51 – 54.

124: **R.R Kulkarni, P.S. Patki, V.P. Jog, Gandage, B. Patwardhan, (1992)** "Efficacy of an Ayurvedic formulation in a Rheumatiod Arthritis: A double – blind, placebo controlled, cross over study", ***Indian journal of Pharmacology***, Vol. 24, 98 – 101.

125: **M.M. Padhi, et al. (1998) "**Nisamalaki in madhumeha (DM): A clinical study", ***Journal of research in Ayurveda and Siddha,*** vol. XIX, 1 – 2, 34 – 40.

126: **A.K. Agrawal, Ch. V. K. Joshi, R.K. Goel, (2000)** "Effect of piper longum linn, Zingiber offcilane linn, and Furela species on gastric ulceration and secretion in rats", ***Indian journal of Experimental biology,*** Vol. 38, no. 10, 994 – 998.

127: **Vidhya S. Rao, Anjali Rao, (2005)** "Anticonsulvant and neurotoxicity profile of Nardostachyes jatamansi in rats", ***Journal of Ethnopharmacology,*** Vol. 102, issue 3, 351 – 356.

128 **M.G. Ramu, N. Janakiramaiah, (1982)** "Kshridhara in anxiety neurosis, (Chittodvega), A pilot study", ***Journal of research in Ayurveda and Siddha,*** Vol. III, no. 3 & 4, 126 – 132.

129: **S. Govindan, (1999)** "A pilot study on the clinical efficacy of Solanum xanthocarpum and solanum trilobatum in brochial asthma", ***Journal of Ethnophamacology,*** Vol. 66, 205 – 210.

130: **P.P. Gupta, S.D. Dubey, J.K. Misra, J.K. Ojha, (1999)** "A comparative study on Brihati and Kantakari in swasa and kasa", ***Journal of research in Ayurvedic and Siddha***, Vol. XX, no. 3 – 4, 191 – 194.

131: **A.A.AL- Qawari, H. Abdul Rehman, B.H.Ali, H.M. Mausa, S.A.EL – Mougy, (2005)** "The ameliorative effect of dates (Phoenix dactylifera L) on ethanol induced gastric under in rats", ***Journal of Ethnophamacology,*** Vol. 98, issue 3, 313 – 317.

132: **Sanjay Kumar Banarjee, Amit Kumar Dinda (2002)** "Chronic garlic administration protects rat heart against oxidative stress induced by ischemic reperfusion injury" ***BMC Pharmacology***, Vol. 2, 16.

133: **Lata S. Saxena, K.K. et al.,(1991)** "Beneficial effects o allium sativum, allium cepa and commiphora mukul on experimental hyperlipidaemia and

atherosclerosis", "***Journal of post graduate medicine***, Vol. 37, (3), 132 – 135.

134: **Ramesh C. Arora, Sunita Arora, Raj K. Gupta**, **(1981)** "The long term use of garlic in Ischemic Heart disease, ***Atherosclerosis"***, Vol. 40, 175 – 179,

135: **Y.K.Gupta, M.H. Virendra Kumar, A.K. Srivastava**, "Effect of centella asiatica on Pentylenetetrezole – induced kindling, congnition and oxidative stress in rats"***Pharmacology, biochemistry and behavior,*** Vol. 74, issue 3, 579 – 585, 203 *(Abstract)*

136: **Ajay Kumar Sharma, C.M. Sharma, Uttam Kumar Sharma, (2005)** "Clinical evaluation of Medhya Resayn effect of manudka Prani – A scientific study", ***Journal of research in Ayurveda and Siddha***, Vol. XXVI, no. 1 – 2, 32 – 44.

137: **K. Baskaran, B. Kizar Ahamath, K. Radha Shanmugasundaram, E.R.B. Shanmugasundaram**, **(1990)"**Antidiabetic effect of a leaf extract from Gymnema sylvestre in non – insulin – dependent daibities meltitus patients", ***Journal of Ethnopharmacology***, Vol. 30, 295 – 305.

138**: E.R.B. Shanmugasundaram, G. Rajeswari, K. Baskaran, (1990)** "Use of Gymnema sylvestre leaf extract in the control of blood glucose in insulin dependent diabetes mellitus", ***journal of Ethnapharmocology***, Vol. 30, 281 – 294.

139: **S.mini, T. Rajmohan**, **(2004)** "Influence of coconut kernel protein on lipid metabolism in alcohol fat rats", ***Indian journal of experimental biology,*** Vol. 42, issue. 1, 53 – 57.

140: **A.M. Baheti, B.S. Rathi, K.R. Khandelwal, S.L. Bodhamkar, (2006)** "Diuretic activity of cocos nucifera", ***Journal of Natural Remedies,*** Vol. 6, no. 1, 35 – 37.

141: **P.C.R. Nair, N.P. Vijayan, (1978)** "The effect of Nirgundi panchang and guggulu in Sodhana – cum – Shamana treatment and shaman treatment of girdharsi (Sciatica)". ***Journal of research in Indian medicine, Yoga and Homoeopathy***, Vol. 13, issue. 3, 14 – 19.

142: **B.Ravishankar, R. Bhaskaran Nair, C.K. Sasikala,(1986)** "Pharmacology of Vitex negundo Linn, (Nirgundi) Root", ***Journal of research in Ayurveda and Siddha,*** vol. VII, no. 1&2, 62 – 77.

143: **Malaya Gupta, Upali Kanti Mazumder, Sima Rani Bawal**, (1999) "CNS activity of vitex negundo in mice", ***Indian journal of Experimental Biology,*** Vol. 32, Issue. 2, 143 – 146.

144: **B, Das. M.M. Padhi, (2003)** "Clinical evaluation of nirgundi tailam in the management of sandhivata". ***Ancient science of life***, Vol. XXIII, (1), 22 – 34.

145: **C.K. Atal, Usha Ztshi, P.G. Rao, (1981)** "Scientific evidence on the role of Ayurvedic herbals on Bioavailability of drugs", ***Journal of Ethnopharmocology***, vol. 4, 229 – 232.

146: **A.K., Agrawal, Ch. V. Rao, K. Sairam, V.K. Joshi, R.K. Geol, (2000)** "Effect of piper longum linn, zingiber officinale Linn, and Ferulka species on a Gastric ulceration and secretion in rats", ***Indian journal of Experimental biology***, Vol. 38, no. 10, 994 – 998.

147: **P.S. Mehra, R.H. Singh**, **(2001)**"Clinical evaluation of the effect of Amrita Pippali NImba yoga in Diabetes Mellitus with special reference to the role of agni and ojas", ***Journal of research in Ayurveda and Siddha,*** Vol. XXII, No. 3 – 4, 183 – 197.

148: **V. Mudgal, (1974)** "Comparative studies on anti inflammatory in Diuretic activity of different parts of Boerhaavia Diffusa linn, (Punamava)". ***Journal research in Indian medicine***, Vol. 9, no. 2, 57 – 59, 1974)

149: **A.K.S. Rawat, S.Malhotra, S.C. tripathi, U. Shome**, **(1997)** "Hepatorprotective activity of beoihaarvia diffusa L- roots a popular Indian Ethnomedicine", ***Journal of Ethnopharmacology,*** Vol. 56, 61 – 66.

150: **M. Amarnath, Sathesh, L. Pari, (2004)** "Antioxidant effect of boerhaavia diffusa in tissue of alloxan induced diabetic rats", ***Indian journal of experimental Biology***, Vol. 42, Issue. 10, 989 – 992.

151: **R.H.Singh, K.N. Udupa**, **(1972)** "Studies on the indegeniuos drugs: Punarnava (Beorhaavia diffusa linn) – Part- IV, Preliminary, controlled clinical trail in Nephrotic syndrome", ***Journal of research in Indian Medicine,*** Vol. 7, No. 3, 28 – 33.

152: **Ramji Singh, R.P.Singh, P.G.Bhattiwala (1991)** "Pushkarguggulu – an anti anginal and hypolipidaemic agent in coronary heart disease", ***Journal of research in Ayurveda and Siddha***, Vol. XII, No. 1 – 2, 1 – 18.

153: **D.Ghosh, A. Anandkumar, (1961)** "Anti – Inflammatory, and analgesic, activities of Gangetin – a pterocarprniod from Desmoduim gangeluim", ***Indian journal of Pharmacology***, Vol. 15, (4), 391 – 402.

154: **Raghwan Govindrajan, Madhavan Vijayan Kumar, Annie Shirwalker, Ajay Kumar Singh Rawat, Shanta Mehotre,, Palpu Pushpangadan**, Antioxidant activity of Desmodium Gangeticum and its Phenolics in athrtic rats, Acta Pharm, Vol. 56, 489 – 496, 2006)

155: **Poonam Dharmani, Pushpesh Kumar Mishra, Rakesh Maurya, Desomodiem**, **(2005) "**Gangeticum, an potent anti ulger agent", ***Indian Journal of Experimental Biology***, Vol. 43, Issue. 6, 517 – 521.

156: **D. Ghosh, A. Anandkumar**,**(1961)**"Anti inflammatory and analgesic activities of Gangetin – a – pterocarpmiod from desmoduim gangetuim", ***Indian journal of Pharmacology,*** Vol. 15, (4) page no. 391 – 402.

157: **Radha Kantha Misra, (1999)** "Management of Rakta vata vis –a – vis arterial hypertension with bramhyadi Ghana Vati"., ***Journal of research in Ayurvedic and Siddha***, Vol. XX, No. 1 & 2, 29 – 45.

158: **Nirmala N. Rage, Urmila M. thatte, Sharadani A. Dahanukar,(1999)** "Adoptogenic properties of six Rasayana herbs used in Ayurvedic Medicine", ***Phythotherapy research,*** Vol. 13, 275 – 291.

159: **Nirmala N. Rage, Urmila M. thatte, Sharadani A. Dahanukar,(1999)** Adoptogenic properties of six Rasayana herbs used in Ayurvedic Medicine, Phythotherapy research, Vol. 13, 275 – 291.

160: **N.P. Visavadiya, A.V.R.L. Narsimhacharya, (2005)** "Hypolidimic, and Antioxidant activities of Asparagus in Hyperchlestremic rats", ***Indian journal of Pharmacology,*** Vol. 37, Issue. 6, 376 – 380.

161: **K.P. Singh, R.K. Singh, (1986)** "Clinical trial on Satavari (Asparagus racemosus Wild). In duodenal ulcer disease", ***Journal of research in Ayurveda and Siddha***, Vol. VII, No. 3 – 4, 91 – 10.

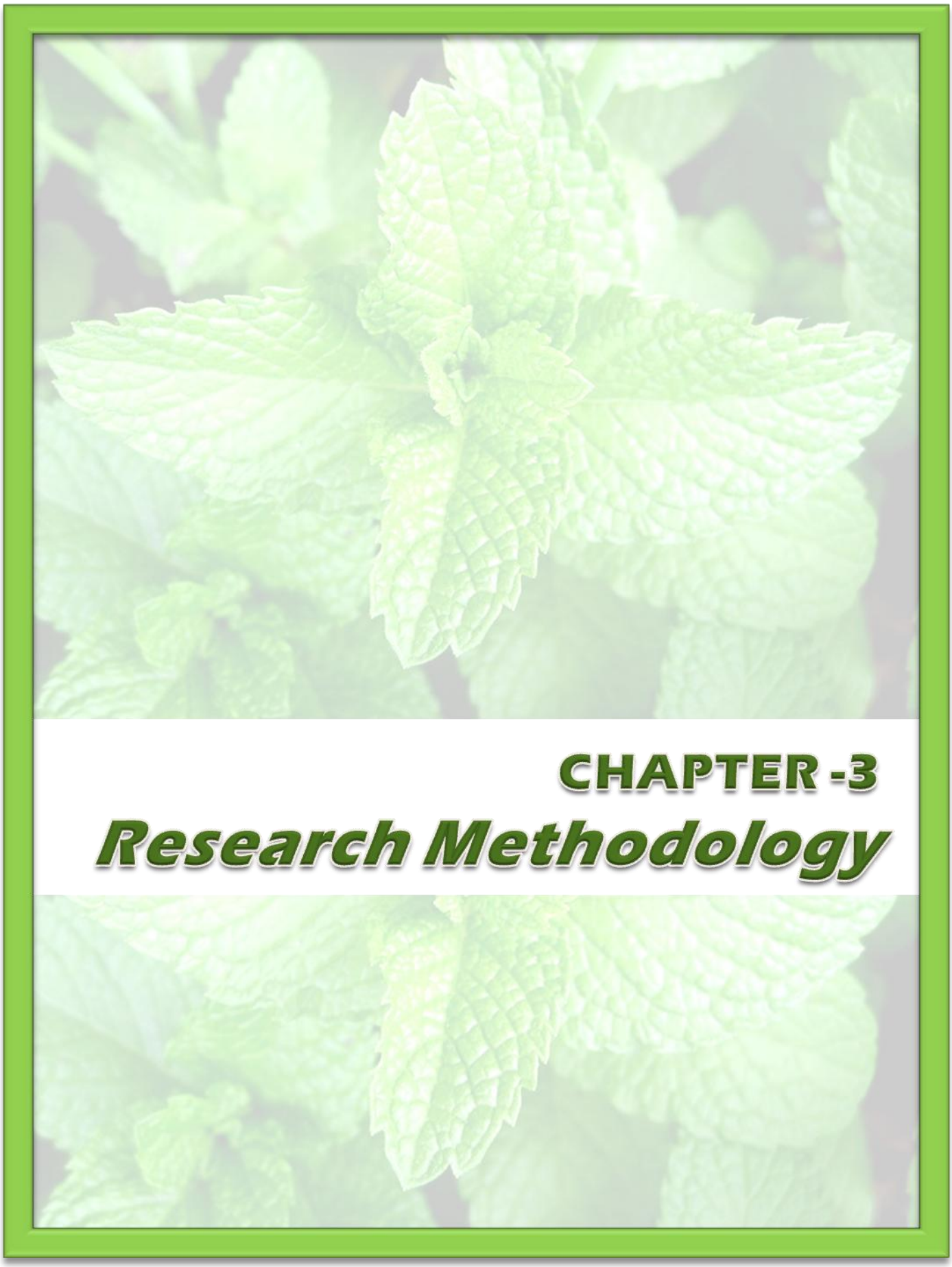
162: **S.L. Vishwakarma, S.C. Pal, Veena, S. Kasture, S.B. Kasture**, (2002)"Anxiolitic and ametic activity of zingibier officiate", ***Physiotherapy Research,*** Vol. 16, 621 – 626.

163: **P.K. Medritta, K.K. Sharma, Surender Singh**, **(2002)** "Evaluation of immunomodulatory potential of Ocimum sanctum seed oil and its

possible mechanism of action", ***Journal of Ethnopharmacology***, Vol. 80, 15 – 20.

164: **K.J. Lavanya Lakshmi, Sudhir Agrawal, R.H. Singh,(2000)** "Studies of Ageing and the antitress effect of tulasi in the aged", ***Journal of Research in Ayurveda and Siddha,*** Vol. XXII, No. 3 -4, 135 – 147.

165: **Sangeeta Shukla, R. Mathur, Anand O Prakash**, **(1987)** "Effect of Butanolic Extract of Pueraria tubersoa DC. on the oestrous cycle of adult rats", ***Indian journal of pharmacology,*** Vol. 19, 49 – 53.



CHAPTER -3

Research Methodology

CHAPTER III

RESEARCH METHODOLOGY

This study is conducted with the main aim to find out the various herbs and herbal remedies prevalent among the natives of Chhattisgarh.

The description of the methods and procedures during the course of investigation are briefly presented under the following heads:

3.1 Research Design.

3.2 Study Site and Description of the Population.

3.3 Type of Sampling.

3.4 Size of Sample.

3.5 Research Tools for Data Collection.

3.6 Data Analysis and Interpretation.

3.1 Research Design – The current work is an Exploratory Research[166] designed to explore the hidden truth about the nature and use of herbal and home remedies prevalent in the urban, rural and tribal area of Chhattisgarh. According to guidelines suggested by W.H.O., the **Ethnographic research** design was adopted for this study. [167]

Ethnographic research is very labor and time intensive, involving excessive field work in a natural setting. General research questions have been identified. Once entry of participants is gained and trust is established between the researcher and population, the research questions then continually refined and becoming more focused. According to World Health Organization "it is an analytical description of social scenes and groups that recreate for the reader the shared beliefs, practices, folk knowledge, and

behavior of those people". To conduct the interview an open ended questionnaire was applied, so that the subject's reality and perceptions can be documented, understood and interpreted.

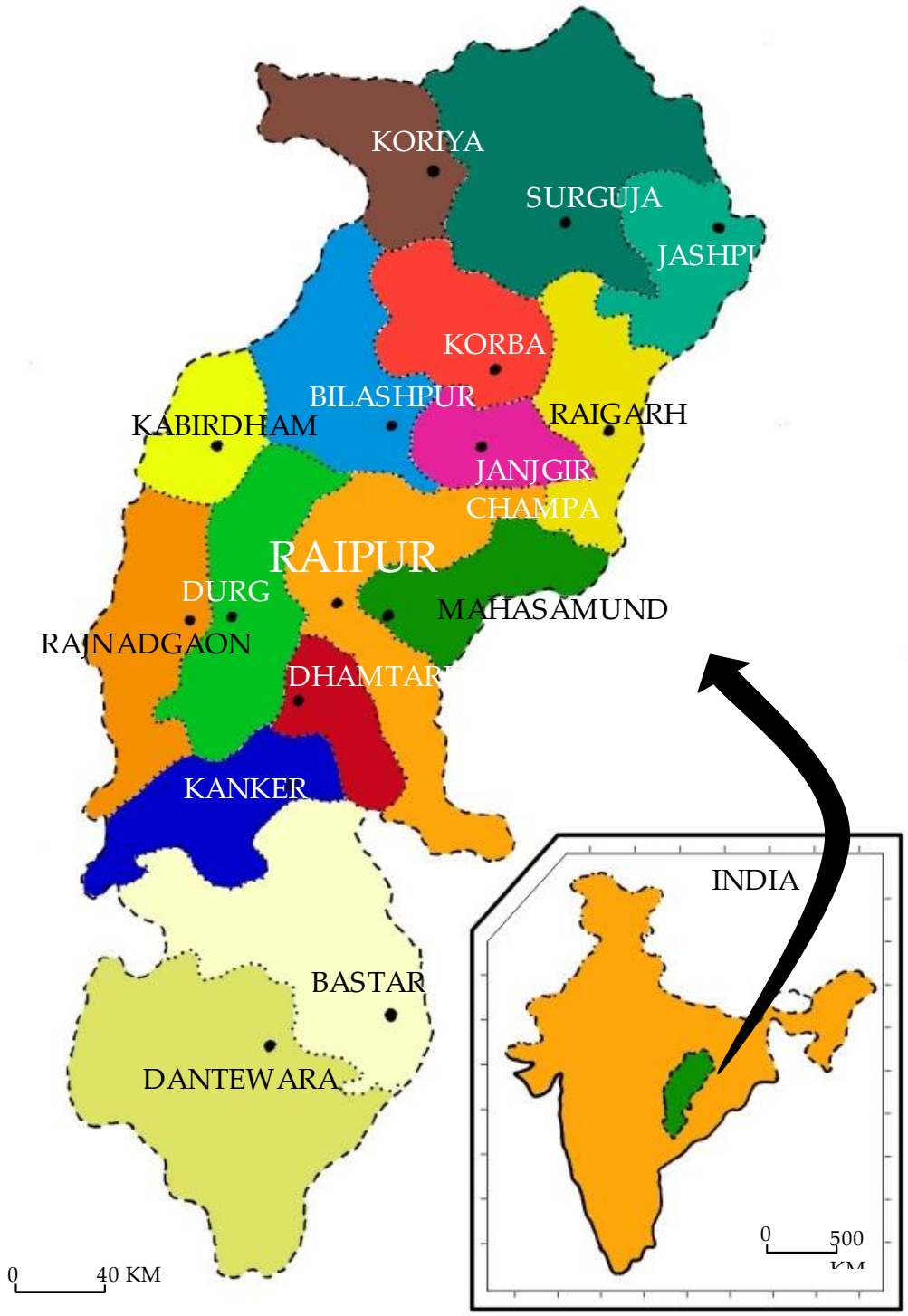
3.2 Study Site and Description of the Population – The study area concentrates mainly the urban, rural and tribal belt of Chhattisgarh. Chhattisgarh is a nascent herbal state of India. It is situated between 17 to 23.7 degrees north latitude and 8.40 to 83.38 east longitude. Chhattisgarh can be divided in to three distinct regions.

- Northern region
- Central plains.
- Southern region

There are 18 districts in the state. Total population of the state according to the 2001 census, is 2.08 crore. Of this 80% of the population lives in the **rural areas** and 20% lives **in urban areas**. Selection of the study site [districts] has been made by random method that is *Jashpur* from **Northern region**, *Raipur, Durg, Dhamtari and Mahasamund* from **central plain region** and *Kanker, Bastar and Kondagaon* from **southern region** of the state.

The state is rich in physical heritage as well as the world famous tribal rich area, **Baster. Tribal people of Chhattisgarh** live in the several districts of the states. One third of the Chhattisgarh's population is of tribes, residing mostly in the dense forests of the northern and southern parts of the state. The state accommodates 42 tribal communities including 5 primitive tribes. Some of the major tribes of the Chhattisgarh are **Gond, Baiga**, **Korba**, **Abhuj Maria, Bison horn Maria, Muria tribe, and Halba**. Among the tribes of Chhattisgarh ***Gond tribe*** is considered as the most prominent one. These tribal communities preserve a vast amount of indigenous knowledge that has yet to be appropriately explored and documented. [168]

FIG 3.1 THE MAP OF THE STUDY SITE -



The informants were those who were constantly using herbal medicine. The group consisted of:

- Users of herbal medicine in urban, rural and tribal societies, village farmers and housewives, using herbal medicines.
- Elderly person.
- Baidhya, Gunias, Baigas.
- Ayurvedic doctors.
- Experts from the field of herbal medicine.
- Regular practitioners.
- The patients those who had recovered from chronic illness and have used herbal medicines.

3.3 Type of Sampling - A purposive sampling was designed to perform the study. By following the ICMR and WHO recommendations this study was undertaken with full consent and participation of the rural, tribal and urban community of herbal healers and users of traditional medicine.

3.4 Size of Sample - Total **300** subjects were selected; 100 people each from urban, rural and tribal area of the state. The field study was conducted during March 2009 to April 2010, in order to cover all the herbs and herbal preparations used in **different seasons** of the year.

3.5 Research Tools - The tools which have been used to collect the primary data were questionnaire, interviews and focal group discussions. In the rural and tribal areas local language was used. An open ended questionnaire was used to collect the information. This questionnaire allowed descriptive responses on the plant part used for medicine, detailed information on the mode of preparation and form in which herb was collected for use.[169]

3.6 Data Interpretation – Collected data were tabulated and analyzed in the light of the objectives set for the study. The statistical measured used for the present study included – percentage prevalence of usage of a particular herb to cure a particular disease. The results are discussed and interpreted with the help of the observations obtained.

Chapter III Cited References

[Bibliography / Webography]

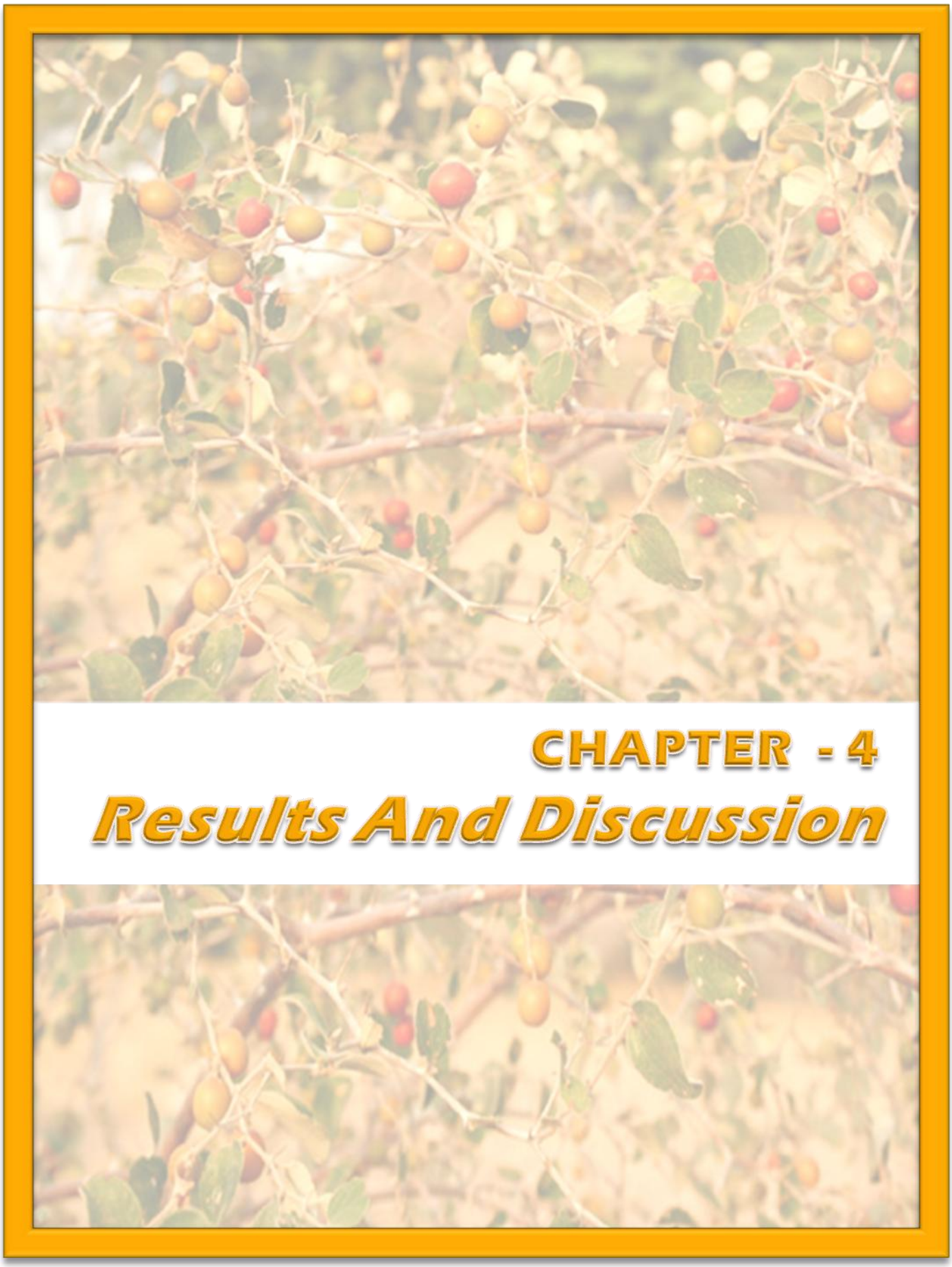
166. Kothari, C. R. (2009) "Research Methodology:Methods an Techniques", II Edition. Published by New Age International Publisher; New Delhi.

167. WHO, Ethical guidelines, page 12.

168. Agrawal, S. C. "Compendium on Rules, Policy and strategies" Chhattisgarh state medicinal plants board. C.G., India.

169. Jean, J .Schensul, (2009). "Introduction to Ethnographic Research Design", available at

www.incom.org.



CHAPTER - 4

Results And Discussion

CHAPTER - IV

RESULTS AND INTERPRETATION

This chapter deals with the findings related to the use of herbal and home remedies by the people of urban, rural and tribal part of Chhattisgarh. The findings of this study exclusively depend on the responses of the participants.

The findings of the study are tabulated according to the following classified manner-

4.1 Herbal and Home Remedies prevalent in **Urban Chhattisgarh**.

4.2 Herbal and Home Remedies prevalent in **Rural Chhattisgarh**.

4.3 Herbal and Home Remedies prevalent in **Tribal Chhattisgarh.**

4.4 **Results** and **Interpretation** of the data on the herbs used in urban, rural and tribal Chhattisgarh.

4.5 Study of some **Herbal Preparations** exclusively used in the treatment of selected diseases.

4.6 Study of **Active Principles** of some selected herbs.

4.1 HERBAL AND HOME REMEDIES PREVALENT IN URBAN CHHATTISGARH-

Most of the natives of urban Chhattisgarh are the immigrants from various states of India. Their awareness about the herbal remedies is varied according to their parent native places. Therefore the trend of the most of the subjects was towards the using herbal medicine from **codified medicinal system** of drugs i.e. *Ayurvedic, Unani* and *Siddayu*. None of the survey on the herbal and home remedies prevalent in the urban society of Chhattisgarh has been reported till date. Therefore results of this study provide the sufficient ground to believe that urban people of the state are also using herbal medicine to cure various ailments.

4.1 **Demographic profile of the Urban Population-**

100 subjects were studied from the urban sector of Chhattisgarh for this investigation. Among them 50 were males and 50 females. According to their **age profile,** they have been divided into three age groups- age group below 40years, 41 to 60years and above 60 years. In each category of age, 56%, 24% and 20% subjects were present respectively. In the urban sector of Chhattisgarh, people were well educated and health conscious. According to their **educational profile** 37% subjects were post graduate, 37% were graduate, 19% metric pass and 07%people were having low level education. According to **nature of profession 13%** subjects were herbal healers, 56% herbal medicine users and 20% were registered doctors and 11% were baidhyas. (Table 1)

Table 1: Demographic Profile of the urban population of Chhattisgarh (n=100)

Demographic profile		Male (n=50)	Female (n=50)	Average (%value)
Age	Below40 years	23	33	56%
	41 to 60 years	17	07	24%
	61 and above.	10	10	20%
Total		50	50	100%
Educational standard	Below metric	05	02	07%
	Metric pass	07	12	19%
	Graduate	23	14	37%
	Post graduate	15	22	37%
Total		50	50	100%
Nature of target population	Herbal healers	05	08	13%
	Baidhyas	08	03	11%
	Registered doctors	12	08	20%
	Users	25	31	56%

Total	**50**	**50**	**100%**

4.2 HERBAL AND HOME REMEDIES PREVALENT IN RURAL CHHATTISGARH-

There are 18 districts in Chhattisgarh state, each with several associated villages. To cover the rural population from all over the state, villages from **northern, central** and **eastern** Chhattisgarh have been selected. In the current study, the focus rural areas are adjoining villages of **Raipur, Dhamtari, Durg, Jashpur, Mahasamund, Kanker, Rajnandgaon, and Kabirdham.**

In the rural Chhattisgarh, people prefer traditional medicine because of cultural rooted faith on the indigenous healers, their easy accessibility, low cost, cultural acceptability, elaborated patient-healer relations, long term family association, and friendly attitude of healers and so on. There is a wide range of herbal and home remedies prevalent in rural Chhattisgarh to cure various ailments, and living close to nature, rural people; acquired the knowledge of natural resources that exist around them in the forest ecosystem. These people are using different formulations made out of plants to cure various ailments.

4.2 Demographic profile of the Rural Population –

100 subjects were studied from the rural belt of Chhattisgarh. Among them 50 were male and 50 were female. According to their **age profile** they have been divided into three groups- below 40years (31%), 41 to 60years (30%), and above 60 years (39%). **Educational status** of the rural people had improved in the last few decades; therefore the awareness about the health priorities has been raise up to a desirable extent. In the present study **educational status** of the rural subjects was found to be - 08% registered post graduate doctors, 04% subjects' graduates, 30% subject's metric pass and 58%

subjects herbal users with very low educational status. According to the **nature of profession**- 46% subjects are herbal healers, 38% subjects' herbal medicine users, 08% are registered doctor and 08% baigas. (Table 2)

Table 2: Demographic profile of the Rural population of Chhattisgarh. (n=100)

Demographic profile		Male (n=50)	Female (n=50)	Average (%value)
Age	Below40 years	17	14	31%
	41 to 60 years	15	15	30%
	61 and above It	18	21	39%
Total		50	50	100%
Educational standard	Below metric	34	24	58%
	Metric pass	05	25	30%
	Graduate	03	01	04%
	Post graduate	08	Nil	08%
Total		50	50	100%
Nature of target population	Herbal healers	25	21	46%
	Baigas	05	03	08%
	Registered doctors	08	Nil	08%
	Users	12	26	38%
Total		50	50	100%

4.3 HERBAL AND HOME REMEDIES PREVALENT IN TRIBAL CHHATTISGARH-

Even in these days of chemo and radiotherapies, tribal's still practice their own system of medicine. Agriculture is the main occupation of the tribal people, but forest and their produces play an important role in their daily life. People of modern generation are picking up the traditional knowledge from their ancestors on the basis of observation only. Many of these prescriptions are very effective because they are based on years of experience. The main

focus tribal areas of this study were the tribal blocks of **Dhamtari, Jashpur**, **Mahasamund, Jagdalpur**, **Raipur and Durg districts.**

There are 42 tribes in Chhattisgarh. The principal among them is "**Gond",** besides a large population of Kanvar, Binjhwar, Uraon, Munda, Halba, Baiga and Sanwara. Like other tribal communities of the world, tribal of Chhattisgarh also have their well preserved age old tradition of folk healing practices. They use wide range of herbal plant species for the treatment of various ailments. The commonest disorders of this area are cough and cold, jaundice, headache, male impotency, fractures, diarrhoea, chest pain, dog bite, snake bite, paralysis and urinary troubles.

In the tribes, all the cultivated and wild plants reported are medicinally important for curing various ailments. The documentation of herbal and home remedies prevalent among them was done according to the following classified manner: Herbs and herbal preparations used in the treatment of:

- Gastro-intestinal disorders.
- Respiratory disorder.
- Musculoskeletal disorders including bone fracture.
- Disorders of Central nervous system.
- Gynecological disturbances.
- Fevers and Infections.
- Chronic metabolic diseases like Diabetes, Heart diseases, and Anaemia.
- Convulsions.
- Skin diseases.
- Dog bite, snake bite, scorpion bite and bites of certain poisonous insects.

Various results showed that gender and age class differ in their traditional knowledge regarding to medicinal plant reported. Males above 50 years of age have more traditional knowledge about medicinal plants and their uses than females. This may be attributed to their involvement in trade

related activities; in most of the cases the older people were noted as being better informants and the vivid reason for this may be their personal experience of using these plants since old times.

4.3 Demographic profile of the Tribal Population –

100 people were studied from the tribal belt of Chhattisgarh. Among them 50 were male and 50 were female subjects. According to **age-** subjects were divided into three groups' i. e. below 40 years, 41 to 60 years, and above 60 years. Among them 15%, 65% and 20% subjects were falling into each category respectively.

School and college education is scantier in the tribes therefore maximum subjects were not well educated. 92% subjects were having low level education [below matriculation]. Only 03% subjects were having the degree of matriculation and 05% subjects were registered medical doctors having post graduate degree in ayurvedic medicine. According to the nature of profession, 36% subjects' were herbal healers, 05% baigas, 05% registered ayurvedic doctors and remaining 54% house wives, farmers and users of herbal medicines. (Table 3)

Table 3: Demographic Profile of the Tribal population of Chhattisgarh (n=100)

Demographic profile		Male (n=50)	Female (n=50)	Average (N=100)
Age	Below40 years	10	05	15%
	41 to 60 years	25	40	65%
	61 and above	15	05	20%
Total		50	50	100%
Educational standard	Below metric	44	48	92%
	Metric pass	03	Nil	03%
	Graduate	Nil	Nil	Nil
	Post graduate	03	02	05%
Total		50	50	100%
Nature of target	Herbal healers	06	30	36%

population	Baigas	**04**	**01**	**05%**
	Registered doctors	**03**	**02**	**05%**
	Users	**37**	**17**	**54%**
Total		**50**	**50**	**100%**

4.4 RESULTS AND INTERPRETATION OF THE HERBS PREVALENT IN URBAN, RURAL AND TRIBAL CHHATTISGARH-

4.4.1 Herbal and Home Remedies prevalent for the treatment of Gastro-intestinal disorders-

Total nine types of gastrointestinal disorders have been reported by the subjects in the studied area. These were Dyspepsia, Diarrhoea, Dysentery, Flatulence, Constipation, Piles, Worms, Vomiting and Jaundice. There were 79 single herbs and 19 polyherbal preparations reported by them to cure these ailments. For the treatment of certain gastrointestinal disorders many dietary dishes were also used by these subjects. These dishes were prepared by using either **wild** or **cultivated** medicinal plants.

a) Dyspepsia -

It is a common complication of the people of the state. Many people were suffering from this problem in the urban, rural and tribal pockets of Chhattisgarh. There were 49 herbs which have been reported by them to overcome this trouble. Among them five most commonly prevalent herbs has been described here.

Results and Interpretation-

Result of the study revealed that the **highest prevalent herb** for the treatment of Dyspepsia was the ***Baheda* [*seed powder*], *Ajmod*,[*dry seed*]**and ***Mahanimb*[*stem bark decoction*]** in urban, rural and tribal area of Chhattisgarh respectively. Subsequently it was used by 90%, 67% and 75% subjects from urban, rural and tribal communities. Besides these in the **Urban**

Community *Anar* [*juice*], *Jeera* [*roasted seed powder*], *Imli* [*pulp sharbat*], and *Pippali* [*dry root powder*] were taken by 85%, 85%, 70% and 67% of subjects respectively. In the **rural community** *Bhui amla* [*whole plant*], *Chhoti papal* [*dried ripe fruit*], *Chirata* [*fresh leaf juice*] and *Sarpunkha* [*fresh leaf juice*] were used by 63%, 60%, 45%, and 40% respectively. In the **tribes** of Chhattisgarh Dyspepsia was cured by using *Hari mirch* [*fruit*], *Vayvidang* [*fruit*], *Suraj mukhi* [*leaf vegetable*] and *Pudina* [*fresh leaf sharbat*]. It is used by 54%, 48%, 44% and 40% of subjects respectively. (Table 4)

b) Diarrhoea -

Occurrence of diarrhoea is highest in rainy season. Total 40 herbs have been reported **by** the inhabitants of Chhattisgarh. The most frequently used herbs were ***Bel*** [*fruit sharbat*] and ***Bhui amla*** [*decoction of all parts of plant + methi seed powder*]. Bel is used by 100% urban and 94% rural people and by 91% of the tribal subjects respectively.

Results and Interpretation-

In Urban society, people were using *Kutja* [dry seed powder and fresh stem bark], *Guduchi* [fresh tendrils], *Lasun* [follicle extract] *and Nirgundi flower* by 90%, 76%, 51% and 45% respectively. *Safed musli* [root extract], *Gular* [stem bark juice], *Amla* [*Murrumba*] *and Chhoti papal* [young shoots along with coriander seeds and sugar candy all in the form of juice] were used by 67%, 65%, 63%, 47% of people **in the rural** part of Chhattisgarh. Herbal users are making various formulations of these herbs. In **the tribes** of Chhattisgarh people reported the use of *Ber [pericarp of dried fruit], Guduchi [juice of tendrils], Sonpatha [root bark powder]* and *Chui-mui*. It was taken by 83%, 81%, 70% and 64% of subjects respectively. (Table 4)

Table 4: Herbs used for the treatment of "Dyspepsia and Diarrhoea"

Name of the disease	Herbs used					
	Urban		Rural		Tribal	
Dyspepsia	**Baheda***	**90%**	**Ajmod ***	**67%**	**Maha nimb***	**75%**
	Anar	85%	Bhui amla*	63%	Hari/ lal mirch	54%
	Jeera	85%	Chhoti papal	60%	Vayvidang*	48%
	Imli	70%	Chirata*	45%	Suraj mukhi	44%
	Pippali*	67%	Sarpunkha	40%	Pudina	40%
Diarrhoea	**Bel***	**100%**	**Bel***	**94%**	**Bhui amla**	**91%**
	Kutja	90%	Safed musli	67%	Ber	83%
	Guduchi	76%	Gualr	65%	Guduchi	81%
	Lasun	51%	Amla*	63%	Sonpatha	70%
	Nirgundi flower	45%	Chhotipopali ,	47%	Chui mui	64%

* Images of these herbs are available in the **plate.**

c) Colic pain –

It is a common complication seen in the people of all age groups in the all parts of the state. Acute abdominal pain, indigestion, distention and abdominal cramps are the chief symptoms of this disease. Total 23 herbs have been reported by the people of the state for curing colic pain. Amongst them five most commonly prevalent herbs from each of the segment has been described here.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **colic pain** was ***Amalki*** [*fruit juice*], ***Amla*** and ***Amola*** [fruit juice] in urban, rural and tribal part of Chhattisgarh respectively. It was used by 95%, 87% and 93% of subjects respectively. In the **Urban society** *Satawari* [root

powder], *Brahmi* [fresh leaf juice], *Ram Tulsi* [five foliate of dry leaf], *Cheed* [resin] were taken by 77%, 51%, 45% and 41% of subjects respectively. In the **rural community** *Pippali, Satawari, Babool and Zimikand,* were used by 85%, 67%, 67%, and 65% respectively. In the **tribes** of Chhattisgarh colic pain was cured by using *Pippali, Brahmi, makoy* and *Cheed by* 90%, 73%, 65% and 62% of population respectively. (Table 5)

d) Constipation-

Chhattisgarh is a rice eating state of India and rice is deficient in fiber. Therefore constipation is a common complaint of the people of this region. To cure this problem total 19 herbs and herbal preparations have been reported by the studied population.

Results and Interpretation-

Results of the study showed that the highest prevalent herb for the treatment of **constipation** was the ***Erand oil, Gritkumari*** [leaf pulp] and ***Baheda*** [dry seed powder] in urban, rural and tribal part of Chhattisgarh respectively. It was used by 100%, 98% and 87% of subjects respectively. Besides this, herbs used by the **urban inhabitants** of Chhattisgarh to cure constipation were *Hing* [gum resin], *Khajoor* [fruit], *Haritaki* [dry powder of mature dried fruit] and *Baheda* [decoction of cotyledons] were reported to be used by 87%, 83%, 61% and 61% subjects respectively. In the **rural community** *Amarbel* [stem juice], *Anar* [seed juice], *Semal* [flower] and *Haritaki were* used by73%, 55%, 48%, and45% of population respectively. In the **tribes** of Chhattisgarh constipation was cured by using *Erand* [oil], *Kantakari* [root decoction], *Semal* [flower] and *Gwar patha* [leaf pulp] by 81%, 54%, 32% and 67% of subjects respectively. (Table 5)

Table5: Herbs used for the treatment of "Colic Pain" and "Constipation"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Colic pain	**Amalki***	**95%**	**Amla***	**87%**	**Amola***	**93%**
	Satawari	77%	Pippali	85%	Pippali	90%
	Brahmi*	51%	Satawari	67%	Brahmi	73%
	Ram Tulsi*	45%	Babool	67%	Kakmachi/ makoy	65%
	Cheed	41%	Zimikand	65%	Cheed	62%
Constipation	**Erand oil***	**100%**	**Grit kumari**	**98%**	**Baheda**	**87%**
	Hing	87%	Amarbel	73%	Erand	81%
	Khajoor	83%	Anar	55%	Kantakari	54%
	Haritaki*	61%	Semal	48%	Semal	32%
	Baheda *	61%	Haritaki	455	Gwar patha	67%

*Image available in the slide.

* Amalki, Amla and Amola are the vernacular name of Indian gooseberries.

e) Piles-

It is also an intestinal disorder of lower bowel region. In Chhattisgarh; many people are suffering from this disorder. There are 16 herbs reported by the users of herbal medicine in Chhattisgarh. Among them most frequently used herbs have been cited here.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb used for the treatment of **piles** were the ***Palash*** [flower]**,** ***Bathua bhaji*** [fresh leaves] and ***Apamarg*** [dry root powder] in urban, rural and tribal part of

Chhattisgarh respectively. It was reported to be used by 50%, 77%, and 92% of subjects, respectively. Besides this the herbs used by the inhabitants of urban Chhattisgarh to cure piles were *Bathua* [fresh leaves], *Dalchini* [stem bark], *Gular* [Gular latex] and *Chui-mui* [root decoction] were **t**aken by 50%, 45%, 44% and 43% respectively. In the **rural community** *Nagkesar, Sooran kand* [underground stem as vegetable], *Kanchnar* [dried buds] and *Neem* [paste of fresh leaves for local application] were reported to be used by 65%, 44%, 53%, and 40% population respectively. In the **tribes** of Chhattisgarh piles was cured by using *Haritaki* [root decoction], *Harjor* [paste of fleshy stem for local application], *Gwarpatha* [leaf gel] and *Karela* [fruit as cooked vegetable].It was reported to be used by 90%, 77%, 75% and 54% of population respectively. (Table 6)

f) Intestinal worms-

This is a most frequent complication of the children. People are using various herbs and herbal preparations to treat this disorder. There were total 21 herbs reported by the users. These herbs were effectively used by them to cure intestinal worms. These herbs were either used in single or in polyherbal combination. Table 6 depicts the most frequently used herbs for the treatment of intestinal worms.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **intestinal worms** was the ***Sonpatha, Sooran kand and Vayvidang*** in urban, rural and tribal part of Chhattisgarh. And it was used by 67%, 87% and 88% of population respectively. Besides this following are the herbs used by the inhabitants of Chhattisgarh to cure intestinal worms. In the **Urban Community** *Dauna, Neem, Saunf* and *Arandi* were taken by 55%, 47%, 40% and 30% of people respectively. In the **rural community** *Moong, Chirayita, Haritaki, Chitrak* are used by 84%, 76%, 66%, 45%, 0f population respectively.

In the **tribes** of Chhattisgarh intestinal worms was cured by using *Hing, Lasun, Pippali* and *Nirgundi,* by 85%, 78%, 67%and 55% of population respectively. (Table 6)

Table 6: Herbs used for the treatment of "Piles" and "Intestinal Worms"

Name of the disease	Herbs Used					
	Urban	%used	Rural	%used	Tribal	%used
Piles	**Palash/Dhak/Tesu**	**50%**	**Bathua bhaji**	**77%**	**Apamarg**	**92%**
	Bathua	50%	Nagkesar	65%	Haritaki	90%
	Dalchini	45%	Sooran kand	44%	Harjor	77%
	Gular	44%	Kanchnar	53%	Gwar patha	75%
	Chui mui	43%	Neem	40%	Karela	54%
Intestinal worms	**Sonpatha**	**67%**	**Sooran kand**	**87%**	**Vayvidang**	**88%**
	Dauna	55%	Munga	84%	Hing	85%
	Neem	47%	Chirayita	76%	Lasun	78%
	Saunf	40%	Haritaki	66%	Pippali	67%
	Arandi	30%	Chitrak	45%	Nirgundi	55%

g) Vomiting-

It is not a disease but is a symptom of many gastrointestinal disorders. In Chhattisgarh people are using various herbs and herbal preparations to cure this problem. There are 18 herbs reported by the users. These are effectively used either as a single herb or as with polyherbal combination.

Results and Interpretation-

Result of the study showed that the highest prevalent herb for the treatment of **vomiting** was the ***Ark Pudina, Ajmod*** and ***Apamarg*** in urban, rural and tribal part of Chhattisgarh respectively. And consequently used by 100%, 78% and 79% of subjects. . Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure vomiting. In the **Urban Community** *Elachy, Ajwain, Green grass* and *Ajmod* were taken by 99% 85%, 67%, and55% of subjects respectively. In the **rural community** people were using *Ashtisamhari, Green grass, Bargad, Sooran kand* and *Apamarg* by 77%, 77%, 56%, 55%, and42% subjects respectively. In the **tribes** of Chhattisgarh vomiting was cured by using *Salparni, Elachy, Metha neem* and *Sooran kand* by 75%, 71%, 58%and 52% of subjects respectively. (Table 7)

h) Jaundice-

This is a not a diseases but is a symptom of various hepatic disorders. In Chhattisgarh people are using various herbs and herbal preparations to cure this problem. There were 21 herbs effectively used by the natives to treat jaundice. These herbs were either used as a single or as with polyherbal combination. Table 7 depicts the most frequently used herbs.

Results and Interpretation-

Results of the study showed that the highest prevalent herbs for the treatment of **jaundice** were the ***Amarbel, Guduchi*** and ***Punarnava*** in urban, rural and tribal part of state. And it is used by 66%, 88% and 90% population respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure jaundice. In the **Urban Community** *Neem, Bhui amla, Grit kumari* and *Giloy* are taken by 65%, 62%, 55% and 51% of population respectively. In the **rural community** *Lal Punarnava Guma, Sal parni, Amarbel,* are used by 85%, 77%, 61%, 54%, of population respectively. In the **tribes** of

Chhattisgarh jaundice was cured by using *Guduchi, Chitrak, Sarpunkha* and *Bhui amla* by 90%, 73%, 72% and 70% of population respectively. (Table 7)

Table7: Herbs used for the treatment of "Vomiting" and "Jaundice"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Vomiting	**Ark Pudina**	**100%**	**Ajmod**	**78%**	**Apamarg**	**79%**
	Elachy	99%	Ashtisamhari*	77%	Salparni	75%
	Ajwain	85%	Green grass	77%	Elachy	71%
	Green grass	67%	Bargad	56%	Meetha neem	58%
	Ajmod	55%	Sooran kand	55%	Sooran kand	52%
Jaundice	**Amarbel**	**66%**	**Guduchi**	**88%**	**Punarnava**	**90%**
	Neem	65%	Lal Punarnava	85%	Guduchi	90%
	Bhui amla	62%	Sal Parni	77%	Chitrak	73%
	Grit kumari	55%	Guma	61%	Sarpunkha	72%
	Giloy	51%	Amer bel	54%	Bhui amla	70%

Ashtisamhari*is called Harjor in local language.

i) Dysentery-

This is a common complaint of urban, tribal and rural part of the state. It is a communicable disease also, and caused either by amoebic or bacillary infection. In Chhattisgarh it is cured by using various herbs. Total 40 herbs have been reported by the people of the state. Among them commonly prevalent herbs have been summarized here.

Results and Interpretation-

Results of the study showed that the highest prevalent herb for the treatment of **Dysentery** was the ***Bel fruit, Bathua bhaji*** and ***Kutja*** in urban, rural and tribal part of state. And it was used by 100%, 88% and 90% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure dysentery. In the **Urban Community**

Palash, Kutja, Ram Tulsi and *Kela* were taken by 78%, 77%, 75% and 74% of subjects respectively. In the **rural community** *Saptaparni, Kutja, Safed musli* and *Gular* were used by 63%, 60%, 60%, and 45% respectively. In the **tribes** of Chhattisgarh dysentery was cured by using *Kela, Doob [gren grass], Gular* and *Ashok* by 77%, 60%, 45% and 58% of subjects respectively.(Table 8)

Table 8: Herbs used for the treatment of "Dysentery"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Dysentery	**Bel fruit**	**100%**	**Bathua**	**88%**	**Kutja**	**90%**
	Palash	78%	Saptaparni	63%	Kela	77%
	Kutja	77%	Kutja	60%	Doob [Green grass]	60%
	Ram Tulsi	75%	Safed musli	60%	Gular	45%
	Kela	74%	Gular	45%	Ashok	58%

4.4.2 Herbal and Home Remedies prevalent for the treatment of "Respiratory Disorders"

Total four types of **Respiratory Disorders** have been prominently reported by the subjects of the state. These are asthma, common cold, whooping cough, bronchitis and pulmonary tuberculosis. There were 27 single herbs and 17 polyherbal preparations reported by them to cure these ailments. (Table 8)

a) Asthma –

In Chhattisgarh it is known as *Dama, or Swas.* For the treatment of this disease 16 herbs have been reported by the subjects. These herbs are either used as a single herb preparation or in polyherbal combination. The following table depicts the most frequently used herbs.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **asthma** was ***Adulsa, Kantakari*** and ***Bhui amla*** in urban, rural and tribal part of state. And it is used by 100%, 74% and 89%of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure asthma. In the **Urban Community** *Mulethti, Ram Tulsi, Nirgundi* and *Apamarg* were taken by 93%, 93%, 65% and 52% of population respectively. In the **rural community** *Mandook parni, Dauna, Kanchnar* and *Deodar* were used by 67%, 63%, 62%, and 45% of subjects respectively. In the **tribes** of Chhattisgarh asthma is cured by using *Dudhi, Karela, harjor* and *Bhilawa*, by 65%, 63%, 60%, and 59%of population respectively. (Table 9)

b) Bronchitis-

In Chhattisgarh it is known as *Tej khansi.* For the treatment of this disease 17 herbs have been reported by the subjects. These herbs were either used as a single herb preparation or in the form of polyherbal combination for the treatment of bronchitis. (Table 9)

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Bronchitis** was ***Ajwain, Bans*** and ***Hared*** in urban, rural and tribal part of the state and are reported to be used by 67%, 65% and 78% subjects respectively. Besides these following were the herbs used by the inhabitants of Chhattisgarh to cure **Bronchitis.** In the **Urban Community** *Brahmi, Vasa, Pippali* and *Hared* are taken by 55%, 55%, 45% and 43% subjects respectively. In the **rural community** *Vasa, Dalchini, Long and Brahmi* were used by 64%, 53%, 52%, and 43% subjects respectively. In the **tribes** of Chhattisgarh **Bronchitis** was cured by using *Amaltas, Jatamansi, Mandukparni* and *Ajwain* by 56%, 55%, 53%, and 45% subjects respectively. (Table 9)

Table 9: Herbs used for the treatment of "Asthma" and "Bronchitis"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Asthma	**Adulsa**	**100%**	**Kantkari**	**74%**	**Bhui amla**	**89%**
	Mulethti	93%	Mandukparni	67%	Dudhi	65%
	Ram Tulsi	93%	Dauna	63%	Karela	63%
	Nirgundi	65%	Kanchnar	62%	Harjor	60%
	Apamarg	52%	Deodar	45%	Bhilawa	59%
Bronchitis	**Ajwain**	**67%**	**Bans**	**65%**	**Hared**	**78%**
	Brahmi	55%	Vasa	64%	Amaltas	56%
	Vasa	55%	Dalchini	53%	Jatamansi	55%
	Pippali	45%	Long	52%	Mandukparni	53%
	Hared	43%	Brahmi	43%	Ajwain	45%

c) Common cold and Whooping cough-

In Chhattisgarh it is a common complication. For the treatment of this disease 14 herbs have been reported by the subjects. These herbs were either used alone or in polyherbal combination. The following table depicts the most frequently used herbs.

Results and Interpretation-

Results of the study showed that the highest prevalent herb for the treatment of **Common cold and whooping cough** was the ***Tulsi, Vasa and Gunja*** in urban, rural and tribal part of state and are reported to be used by

100%, 100% and 85% subjects respectively. Besides this, herbs used by the **urban inhabitants** of Chhattisgarh to cure **Common cold and whooping cough** were *Adrak, Mulethti, Pippali* and *Sonth* which were taken by 85%, 84%, 80% and 80% of the subjects respectively. In the **rural community** *Nirgundi, Kantkari, Dudhi* and *Mulethti* were used by 67%, 73%, 66%, and 78% of the subjects respectively. In the **tribes** of Chhattisgarh **Common cold and whooping cough** is cured by using *Tulsi, Bel, Jatamansi and Adrak by* 86%, 84%, 67% and 55% subjects respectively. (Table 10)

Table10: Herbal and Home remedies prevalent for the treatment of "Common cold" and "Whooping cough"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Common cold And Whooping cough	**Tulsi**	**100%**	**Vasa**	**100%**	**Gunja**	**85%**
	Adrak	85%	Nirgundi	67%	Tulsi	86%
	Mulethti	84%	Kantkari	73%	Bel	84%
	Pippali	80%	Dudhi	66%	Jatamansi	67%
	Snoth	80%	Mulethti	78%	Adrak	55%

d). Tuberculosis -

In Chhattisgarh the prevalence of **pulmonary tuberculosis** is high especially in the tribal areas. For the treatment of this disease 12 herbs have been reported by the subjects. These herbs were either used as a single herb preparation or as polyherbal combination. The following table depicts the most frequently used herbs. (Table 11)

Results and Interpretation-

Results of the study revealed that the highest prevalent herbs for the treatment of **Pulmonary Tuberculosis** was the ***Adulsa, Ashwagandha*** and ***Ban Tulsi*** in urban, rural and tribal part of state by 76%, 70% and70%of subjects respectively. Besides this following herbs were used by the inhabitants of Chhattisgarh to cure **Tuberculosis** In the **Urban Community** *Tulsi, Guduchi, Brahmi* and *Apamarg* were taken by 75%, 67%, 52% and 50% subjects respectively. In the **rural community**, *Pippali, Amaltas, Rohan, Sarpagandha* were used by 73%, 61%, 51%, and 45%, subjecs respectively. In the **tribes** of Chhattisgarh **Tuberculosis** is cured by using *Sarpagandha, Dauna, Mandukparni, Lasun, Arjun, and Vasa by* 68%, 65%, 67%, 64%, 63% and 60% subjects respectively. It has been observed that in the urban society people were not depend on single herb for their treatment but they were taking medicines based of the above reported herbs. (Table 11)

Table 11: Herbal and Home remedies prevalent for the treatment of "Pulmonary Tuberculosis"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Pulmonary . Tuberculosis	**Adulsa**	**76%**	**Ashwagandha**	**70%**	**Ban Tulsi**	**70%**
	Tulsi	75%	Pippali	73%	Sarpagandha	68%
	Guduchi	67%	Amaltas	61%	Dauna	65%
	Brahmi	52%	Rohan	51%	Mandukparni	67%
	Apamarg	50%	Sarpagandha	45%	Lasun	64%

4.4.3: Herbal and Home remedies prevalent for the treatment of "Musculoskeletal disorder"

Total four types of **musculoskeletal disorders** have been prominently reported by the subjects of the state. These are rheumatism, gout, bone

fracture and joint pain. And there were 44 single herbs and 26 polyherbal preparations reported by them to cure these ailments.

a) Rheumatism-

In Chhattisgarh it is known as *Gathiya vatt.* For the treatment of this disease 16 herbs have been reported by the subjects. These herbs were either used in single herb preparation or in polyherbal combination. Table no. 12 depicts the most frequently used herbs for cure of Rheumatism.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Rheumatism** was the ***Erand, Malkangini*** and ***Rasna*** in urban, rural and tribal part of state by 95%, 82% and 85% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **Rheumatism**. In the **Urban Community** *Guggulu, Nirgundi, Sonth and Amaltas* were taken by 90%, 73%, 67% and 42% of subjects respectively. In the **rural community** *Palash, Nirgundi Jamalgonta* and *Sarpagandha* were used by 73%, 71%, 42%, and 40% subjecs respectively. In the **tribes** of Chhattisgarh **Rheumatism** was cured by using *Guggulu, Banslochan, Pilavasa* and *Bakul* by 76%, 63%, 55% and 43% of subjects respectively. (Table 12)

b) Gout -

In Chhattisgarh it is known as *Asadhya Gathiya.* For the treatment of this disease 14 herbs have been reported by the subjects. These herbs are either used in single or in polyherbal combination. The table 12 depicts the most frequently used herbs for the treatment of Rheumatism and Gout.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Gout** was ***Oak, Dalchini*** and ***Sonpatha*** in urban, rural and tribal part of state. And it was used by 90%, 76% and 83% of subjects respectively. Besides this, following were the herbs used by the inhabitants of Chhattisgarh to cure **Gout**. In the **Urban Community** *Pilavasa, Bidhara, Amaltas* and *Jyotismati* were taken by 64%, 63%, 60% and 56% respectively. In the **rural**

community *Indrayan, Aparajita, Guggulu* and *Giloy* were used by 74%, 72%, 70%, and 68% of subjects respectively. In the **tribes** of Chhattisgarh **Gout** was cured by using *Rasna, Giloy, Bakul* and *Indrayan* by 80%, 80%, 78% and 45% of subhects respectively. (Table 12)

Table12: Herbal and Home remedies prevalent for the treatment of "Rheumatism" and "Gout"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Rheumatism	**Erand**	**95%**	**Malkangini**	**82%**	**Rasna**	**85%**
	Guggulu	90%	Palash	73%	Guggulu	76%
	Nirgundi	73%	Nirgundi	71%	Banslochan	63%
	Snoth	67%	Jamalgonta*	42%	Pilavasa	55%
	Amaltas fruit	42%	Sarpagandha	40%	Bakul	43%
Gout	**Oak**	**90%**	**Dalchini**	**76%**	**Sonpatha**	**83%**
	Pilavasa	64%	Indrayan	74%	Rasna	80%
	Bidhara	63%	Aparajita	72%	Giloy	80%
	Amaltas	60%	Guggulu	70%	Bakul	78%
	Jyotismati	56%	Giloy	68%	Indrayan	45%

**Jamalghonta is strong purgative therefore its use should be done under the strict supervision of herbal healer.*

c) Bone fracture-

It is not a disease but a common accidental condition. For the treatment of this trouble 20 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Table 13 depitcs the herbs used to cure bone fracture.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Bone fracture** was the ***Harjor*** in urban, rural and tribal part of state by 85%, 87% and 85% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to settle **Bone fracture**. In the **Urban Community** *Babool, Arjun, Kali Musli* and *Rasna* were taken by 65%, 65%, 53% and 53% of people respectively. In the **rural community** *Erand, Guggulu, Nirgundi* and *Rasna* were used by 85%, 80%, 73%, and 70% respectively. In the **tribes** of Chhattisgarh **Bone fracture** was cured by using *Rasna, Palash, Guggulu* and *Arjuna* by 80%, 78%, 75% and 60% of subjects respectively. (Table 13)

Table13: Herbs used for the treatment of "Bone fracture"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Bone fracture	**Harjor**	**85%**	**Harjor**	**87%**	**Harjor**	**85%**
	Babool	65%	Erand	85%	Rasna	80%
	Arjuna	65%	Guggulu	80%	Palash	78%
	Kali musli	53%	Nirgundi	73%	Guggulu	75%
	Rasna	53%	Rasna	70%	Arjuna	60%

4.4.4: Herbal and Home Remedies Prevalent for the treatment of "Mental Disorders"

Total three types of **mental disorders** have been prominently reported by the subjects in the state. These are mental weakness, insomnia and epilepsy. 16 single herbs preparations were reported by them to cure these ailments.

a) Mental weakness-

In Chhattisgarh the percent of mentally challenged people is quite high. The main cause of mental retardation is ascribed as poor dietary practices. For the treatment of this problem 24 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Table-14 depicts the most frequently used herbs.

Results and Interpretation-

Result of the study showed that the highest prevalent herb for the treatment of **mental weakness** was ***Brahmi, Mandukparni*** and ***Akarkara*** in urban, rural and tribal part of state respectively. It was reported to be used by 85%, 86% and 100% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **mental weakness**. In the **Urban Community** *Shankhpushpi, ashwandha, Jyotismati* and *Mandukparni* were taken by 80%, 80%, 76% and 65% of subjects respectively. In the **rural community** *Brahmi, Lalpunarnava, Akarkara,* and *Indrayan* were used by 85%, 76%, 76%, and 66% of people respectively. In the **tribes** of Chhattisgarh **mental weakness** was cured by using *Sarpagandha, Mandukparni, Gular* and *Patharchur* by 73%, 67%, 67% and 56% of subjects respectively. (Table 14)

b) Insomnia –

In Chhattisgarh insomnia is rarely occurring disorder. For the treatment of this disease 14 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. The following table depicts the most frequently used herbs.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **insomnia** was the ***Ashwagandha, Ashwagandha and Brahmi,*** in

urban, rural and tribal part of state and used by 93%, 83% and 95% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **insomnia**. In the **Urban Community** *Brahmi, Jyotismati, Mandukparni* and *Shankhpushpi* were taken by 89%, 85%, 55% and 54% of subjects respectively. In the **rural community**, *Mandukparni, Lalpunarnava, Indrayan,* and *Brahmi* were used by 78%, 55%, 54%, 50%, of subjects respectively. In the **tribes** of Chhattisgarh **insomnia** was cured by using *Mandukparni, Akarkara, Patharchur and Doob [green grass]* by 75%, 73%, 56% and 55% subjects respectively. (Table 14)

Table 14: Herbs used for the treatment of "Mental Weakness" and "Insomnia"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Mental weakness	Brahmi **	85%	Mandukparni	86%	Akarkara	100%
	Shankhpushpi **	80%	Brahmi *	85%	Sarpagandha	73%
	Ashwaganndha*	80%	Lalpunarnava	76%	Mandukparni	67%
	Jyotismati**	76%	Akarkara*	76%	Gular	67%
	Mandukparni **	65%	Indrayan*	66%	Patharchur	56%
Insomnia	Ashwagandha**	93%	Ashwagandha	83%	Brahmi	95%
	Brahmi **	89%	Mandookparni	78%	Mandukparni	75%
	Jyotismati**	85%	Lalpunarnava	55%	Akarkara	73%
	Mandukparni	55%	Indrayan*	54%	Patharchur	56%
	*Shankhpushpi	54%	Brahmi *	50%	Doob/Green grass	55%

** In the urban area, there are capsules are available in the market.

c) Epilepsy and Convulsion-

In Chhattisgarh epilepsy is more prevalent in the rural and tribal areas and is mostly inherited from families. For the treatment of this disease 14

herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combinations. Table 15 depicts the most frequently used herbs for the treatment of epilepsy and convulsions.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **epilepsy and convulsion** was the ***Brahmi Ghrita, Indrayan*** and ***Akarkara*** in urban, rural and tribal part of state respectively. And it is used by 85%, 86% and 100% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **epilepsy and convulsion**. In the **Urban Community** *Vach, Ashwandha, Brahmi* and *Mandukparni* were taken by 55%, 47%, and 40% and30% subjects respectively. In the **rural community** *Brahmi, Mandukparni, Akarkara,* and *patharchur* were used by 61%, 51%, 45%, and 40% respectively. In the **tribes** of Chhattisgarh **epilepsy and convulsion** was cured by using *Atibala [kanghi], Ashwandha, Safed musli* and *Doob [Green grass] by* 64%, 55%, 52% and 43% respectively. (Table 15)

Table 15: Herbs used for the treatment of "Epilepsy" and "Convulsion"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Epilepsy And convulsion	**Brahmi ghrit**	**67%**	**Indrayan**	**70%**	**Akarkara**	**65%**
	Vacha churn	55%	Brahmi	61%	Atibala[kanghi]	64%
	Ashwandha cap.	47%	Mandukparni	51%	Ashwandha	55%
	Brahmi cap.	40%	Akarkara	45%	Safed musli	52%
	Mandook parni cap.	30%	Patharchur	40%	Doob [Green grass]	43%

4.4.5: Herbs used for the treatment of "Renal disorders"

The most prominent renal disorder in state is kidney stone. It is equally prevalent in the urban, rural and tribal part of the state. There were 15 single herbs and poly herbal preparations reported by the users of herbal medicine to cure this problem.

a) Kidney stone-

Results of the study revealed that the highest prevalent herb for the treatment of **kidney stone** was the ***Cystone, Vidarikand*** and ***Apamarg*** in urban, rural and tribal part of state and was reported to be used by 70%, 88% and 95% subjects respectively. Besides these following were the herbs used by the inhabitants of Chhattisgarh to cure **kidney stone**. In the **Urban Community** *Kulthi, Patharchur, Haldi* and *Apamarg* were taken by 61%, 51%, 45% and 40% subjects respectively. In the **rural community** *Gokshura, Tejraj kand, Ramdaton* and *Patharchur* were used by the 85%, 76%, 76%, and 65% of subjects respectively. In the **tribes** of Chhattisgarh **kidney stone** was cured by using *Patharchur, musli, Sehund* and *Gular* by 90%, 73%, 67% and 42% subjects respectively. (Table 16)

Table16: Herbs used for the treatment of "Kidney Stone"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
kidney stone	**Cystone***	**70%**	**Vidarikanda**	**88%**	**Apamarg**	**95%**
	Kulthi	61%	Gokshur	85%	Patharchur	90%
	Patharchur	51%	Tejraj	76%	Musli	73%
	Haldi	45%	Ramdatoon	76%	Sehund	67%
	Apamarg	40%	Patharchur	655	Gular	42%

*Cystone- is an ayurvedic polyherbal combination and popular among the urban natives to cure renal stone.

4.4.6: Herbs used for the treatment of "Diabetes"

In Chhattisgarh the prevalence of diabetes is quite high. For the treatment of this disease 34 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Table 17 reveals the most frequently used herbs for the cure of diabetes.

Results and Interpretation-

Results of the study showed that the highest prevalent herb for the treatment of **diabetes** was the ***Gudmar, Beeja*** and ***neem leaves*** in urban, rural and tribal part of state, and used by 100%, 99% and 96% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **diabetes**. In the **Urban Community** *Bilve patta, Jamun seed, Amalki and Karela* were taken by 95%, 95%, 85% and 85% of subjects respectively. In the **rural community** *Methi, Bargad, Gular and Kanchnar* are used by 95%, 81%, 54%, and 50% of subjects respectively. In the **tribes** of Chhattisgarh **diabetes** was cured by using *Gular, Bargad, Tejpatta and Beeja by* 64%, 64%, 56% and 94% of subjects respectively. (Table 17)

Table 17: Herbs used for the treatment of "Diabetes"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Diabetes	**Gudmar**	**100%**	**Beeja [vijaysar]**	**99%**	**Neem**	**96%**
	Bilve patra	95%	Methi	95%	Gular	64%
	Jamum seed	95%	Bargad	81%	Bargad	64%
	Amalki	85%	Gular	54%	Tej patta	56%
	Karela	85%	Kanchnar	50%	Beeja **[vijaysar]**	94%

4.4.7: Herbal and Home Remedies prevalent for the treatment of "Hypertension" and "Heart Problems"

In Chhattisgarh percent of hypertensive patients and heart problems vary according to region. In the urban areas the percentage seems to be higher

then the rural and tribal belts. This is considered to be a disorder of lifestyle. For the treatment of this disease 19 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Table 18 depicts the most frequently used herbs.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Hypertension and Heart problems** was ***Arjun cap., Arjun bark decoction*** and ***Arjun stem bark churn*** in urban, rural and tribal part of state respectively. And it is used by 99%, 100% and 89% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **Hypertension and heart problem**s. In the **Urban Community** *Mandook parni, Brahmi, Sarpagandha* and *Lasun* taken by 95%, 81%, and 54% and50% of subjects respectively. In the **rural community** *Gudmar, Sadabahar, Deodar* and *Sarpagandha* were used by 95%, 95%, 85%, and 85% of subjects respectively. In the **tribes** of Chhattisgarh **Hypertension and heart problems** were treated by using *Lasun, Satawari, Sarpagandha* and *Hing* by 88%, 78%, 78%, and63% of subjects respectively. (Table 18)

Table18: Herbal and Home remedies prevalent for the treatment of "Hypertension" and "Heart problems"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Hypertension and heart problems	**Arjun***	**99%**	**Arjun bark**	**100%**	**Arjun**	**89%**
	Mandook parni*	95%	Gudmar	95%	Lasun	88%
	Brahmi*	81%	Sadabahar	95%	Satawari	78%
	Sarpagandha*	54%	Deodar	85%	Sarpagandha	78%
	Lasun*	50%	sarpagandha	85%	Hing	63%

***** In urban area people were using capsules of the single herbs.**

4.4.8: Herbal and Home remedies prevalent for the treatment of "Anaemia"

In Chhattisgarh percent of anemic patients are higher especially in the rural and tribal areas. The main cause of this disorder is nutritional deficiency. For the treatment of this disease 25 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Table 19 depicts the most frequently used herbs for the cure of anaemia

Results and Interpretation-

Results of the study revealed that the highest prevalent herb was ***Amla juice, Ashwagandha*** and ***Guduchi*** for the treatment of **Anaemia** in the urban, rural and tribal part of state respectively. And it was reported to be used by 78%, 84% and 71% subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **Anaemia.** In the **Urban Community** *Anar juice, Ashwagandha, Punarnava* and *Guduchi* were taken by 75%, 71%, 65% and 55% of subjects respectively. In the **rural community** *Punarnava, Mandook parni, Haritaki* and *Munga* are used by 82%, 77%, 67%, and 65% respectively. In the **tribes** of Chhattisgarh **Anaemia** was cured by using, *Punarnava, Brahmi, Raktavidar and Swarna chirchiri* by 70%, 65%, 56% and 55% of people respectively. (Table 19)

Table19: Herbal and Home remedies prevalent for the treatment of "Anaemia"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Anaemia	**Amla juice**	**78%**	**Ashwagandha**	**84%**	**Guduchi**	**71%**
	Anar juice	75%	Punarnava	82%	Punarnava	70%

	Ashwagandha	71%	Mandukparni	77%	Brahmi	65%
	Punarnava	65%	Haritaki	67%	Raktavidar	56%
	Guduchi	55%	Munga	65%	Swarn chirchciri	55%

4.4.9: Herbal and Home Remedies prevalent for the treatment of "Obesity"

In Chhattisgarh the prevalence of obesity is comparatively high in urban society than rural and tribal communities. This is also considered a lifestyle disorder. For the treatment of this complication 14 herbs have been reported by the subjects. These herbs were either used in single or in polyherbal combination. Obesity is rarely seen in the rural and tribal communities, so no herbs have been reported by these subjects. Table 20 depicts the most frequently used herbs to cure this disorder.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Obesity** was the G*uggulu* in the urban society. And it was used by 75% of the studied population. Besides this following were the herbs used by the **urban inhabitants** of Chhattisgarh to cure **Obesity**. *Arjun bark, Kanchnar, Lalpunarnava* and *Lasun* were used by 74%, 67%, 56% and 55% of the subjects respectively. Obesity is not the disorder of the rural and tribal community therefore no specific herbs have been reported by the inhabitants of these areas. In the tribes higher degree of malnutrition has been observed [especially under nutrition]. So that herbal healers are focused on this problem. (Table 20)

Table 20: Herbs used for the treatment of "Obesity"

Name of the	Herbs used

disease	Urban	%used	Rural	%used	Tribal	%used
Obesity	Guggulu *	75%	Not Reported	--------	. Not Reported	--------
	Arjun bark*	74%				
	Kanchnar*	67%				
	Lalpunar nava	56%				
	Lasun *	55%				

***These preparations are available either in tablets or capsule form.**

4.4.10: Herbal and Home Remedies Prevalent for the treatment of "Itching" and "scabies"

Itching and scabies are the problem of urban, rural and tribal community of Chhattisgarh. Therefore several medicines were present in the routine use of the inhabitants of the state. Total 24 herbs have been reported by the inhabitants of the state.

Results and Interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Itching and scabies** were ***Neem, Akarkara and Nirgundi*** in the urban, rural and tribal part of the state respectively. It is used by the 85%, 76% and 66% of the subject's respectively. In the **urban community** *Giloy juice, Haldi churn, Khadirarist* and *Semal* was used. And it was reported by 80%, 80%, 76% and 65%of the subjects respectively. In the **rural community** *Bakuchi, Gunja, Sarpunkha* and *Apamarg* were used by 74%, 72%, 70%and 68% of subjects respectively. In the **tribes** of Chhattisgarh **Itching and scabies** were cured by using *Charota, Bakuchi, Apamarg* and *Neem* by 65%, 63%, 62% and 45% of subjects respectively. (Table 21)

Table 21: Herbs used for the treatment of "Itching" and "scabies"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Itching and Scabies	**Neem**	**85%**	**Akarkara**	**76%**	**Nirgundi**	**66%**
	Giloy juice	80%	Bakuchi	74%	Charota	65%
	Haldi churn	80%	Gunja	72%	Bakuchi	63%
	khadirarist	76%	Sarpunkha	70%	Apamarg	62%
	Semal [stem bark]	65%	Apamarg	68%	Neem	45%

4.4.11: Herbal and Home Remedies Prevalent for the treatment of "Leucorrhoea"

It is the most common problem of the women of the urban, rural and tribal parts of the state. By an in-depth discussion with affected subjects it was explored that many of them were using various herbal and home remedies for its treatment. Total 35 herbs have been reported by them.

Results and Interpretation-

The highly prevalent herb for its treatment in the urban, rural and tribal areas was ***Chaulai root juice, Guduchi*** and ***Ram daton.*** And it is used by 75%, 93% and 67% of the subjects respectively. Other than this certain herbs have been listed by the studied population. In the **urban society** *Ashoka* [stem bark], *Daru haldi, Triphala khada* and *Ripe bananas* were commonly used. And it was reported by the 74%, 67%, 56% and 55% of the of subjects. In the **rural sector** *Asokarista, Triphala* [decoction] *Jeera* [decoction], and *Patal konhara* were common. It was used by the 84%, 82%, 77%, 77%, of the subjects respectively. In the **tribal area** *Chaulai* [as cooked vegetable] *Bidhara* [root powder], *Safed musli* [root powder] and *Tinpaniya bhaji* [as cooked vegetable] is reported. It was used by 55%, 47%, 40%, and 30% of subjects respectively. (Table 22)

Table22: Herbs used for the treatment of "Leucorrhoea".

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Leocorrhoea	**Chaulai root**	**75%**	**Guduchi**	**93%**	**Ram daton**	**67%**
	Ashok	74%	Ashokarista*	84%	Chaulai	55%
	Daru Haldi	67%	Ttifala**	82%	Bidhara	47%
	Trfala Khada	56%	Jeera	77%	Safed musli	40%
	Ripe Banana	55%	Patal konhara	77%	Tinpaniya bhaji	30%

*It is a polyherbal combination available in the market.

** It is a combination of Amla, Harde and Baheda in equal proportion.

4.4.12: Herbal and Home Remedies Prevalent for the treatment of "Snake and Honey bee bites"

As 44% area of Chhattisgarh is covered by forests, Snake and Honey bee bites are frequent problem of the rural and tribal areas. In the urban area these types of events are rarely seen.

Results and interpretation-

This study reports the total 15 herbs which were commonly used by the inhabitants of the rural and tribal areas. Among them ***Apamarg*** and ***Kadam*** was most prevalent herb. And used by 67% and 55% of subjects respectively. In the **rural areas** *Nirgundi, Jyotismati, Kadam* and *Kalahari* were most prevalent herbs. It was used by the 55%, 47%, 40% and 30% of subjects respectively. In the **tribal areas** *Guma, Bakul, Metha neem* and *Suraj mukhi* were the common herbs used by 54%, 51%, 46%, 44%, of population to treat the above problem. (Table 23)

4.4(M) Herbal and Home Remedies Prevalent for the treatment of "Stings"

In the urban society this rarely happens and if happens is treated by the allopathic doctor. In the rural and tribal areas Sarpagandha 69%, Reetha

65%, Rasna61%, Manjith53% and Apamarg 40% are commonly used herbs for its cure.

Results and Interpretation-

Scorpion sting is not commonly seen in the urban areas. Therefore no specific herbal and home remedy reported by the urban subjects. But in rural and tribal part of the state it is a frequent finding. The herbs which were used in highest percent by the people of rural and tribal Chhattisgarh were *Sarpandha* (69%) and *Manjeeth* (68%). Other than this the **rural** populations were using *Reetha, Rasna* and *Manjith*. It is reported to be used by the 65%, 61% and 53% of subjects respectively. In the **tribes** of the state *Rasna, Reetha, Sarpagandha* were used by the 59%, 48%, 47% of the subjects' respectively. (Table 23)

Table 23: Herb Used To Cure "Bites" and "Stings"

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
Bites [snake and honey bee]	Not Reported	—	**Apamarg**	**67%**	**Kadam**	**55%**
			Nirgundi	55%	Guma	54%
			Jyotismati	47%	Bakul	51%
			Kadam	40%	Metha Neem	46%
			Kalihari	30%	Surajmukhi	44%
Stings	Not Reported	—	**Sarpagandha**	**69%**	**Manjith**	**68%**
			Reetha	65%	Rasna	59%
			Rasna	61%	Reetha	48%
			Manjith	53%	Sarpagandha	47%

4.4.13: Herbal and Home Remedies Prevalent for the treatment of "Malaria"

In Chhattisgarh incidence of **Malaria fever** vary according to region. In the urban areas the percentage is higher as compared to rural and tribal areas. For the treatment of this disease 17 herbs have been reported by the subjects. These herbs are either used in single or in polyherbal combination. The following table depicts the most frequently used herbs for the treatment of Malaria.

Results and interpretation-

Results of the study revealed that the highest prevalent herb for the treatment of **Malaria** was ***Karang seed, Chirata*** and ***Bhui nimb*** in the urban, rural and tribal part of state. And it was used by 58%, 85% and 90% of subjects respectively. Besides this following were the herbs used by the inhabitants of Chhattisgarh to cure **Malaria.** In the **Urban Community** *Indrayan root, Pipal stem bark, Saptaparni [fresh stem bark]* were used by 50%, 49%, and 48% of subjects respectively. In the **rural community** *Tinpaniya bhaji, Saptaparni, Bhui nimb and Chaulai root* were used by 80%, 80%, 76%, and 65% of people respectively. In the **tribes** of Chhattisgarh **Malaria** was cured by using *Lasora, Neem* and *Chirata.* And it is supposed to be used by 70%, 65% and 56% of population respectively. (Table 24)

Table 24: Herbs used for the treatment of Malaria

Name of the disease	Herbs used					
	Urban	%used	Rural	%used	Tribal	%used
	Karang seed	58%	Chirata	85%	Bhui nimb	90%

Malaria	Indrayan root	50%	Tinpaniya bhaji	80%	Lasora	70%
	Pipal stem bark	49%	Saptaparni	80%	Neem	65%
	Saptapar ni	48%	Bhui nimb	76%	Chirata	56%
	----------	--------	Chaulai root	65%	_____	_____

4.5: STUDY OF SOME HERBAL PREPARATIONS [MEDICATED DIETARY DISHES] USED IN THE TREATMENT OF SELECTED DISEASES

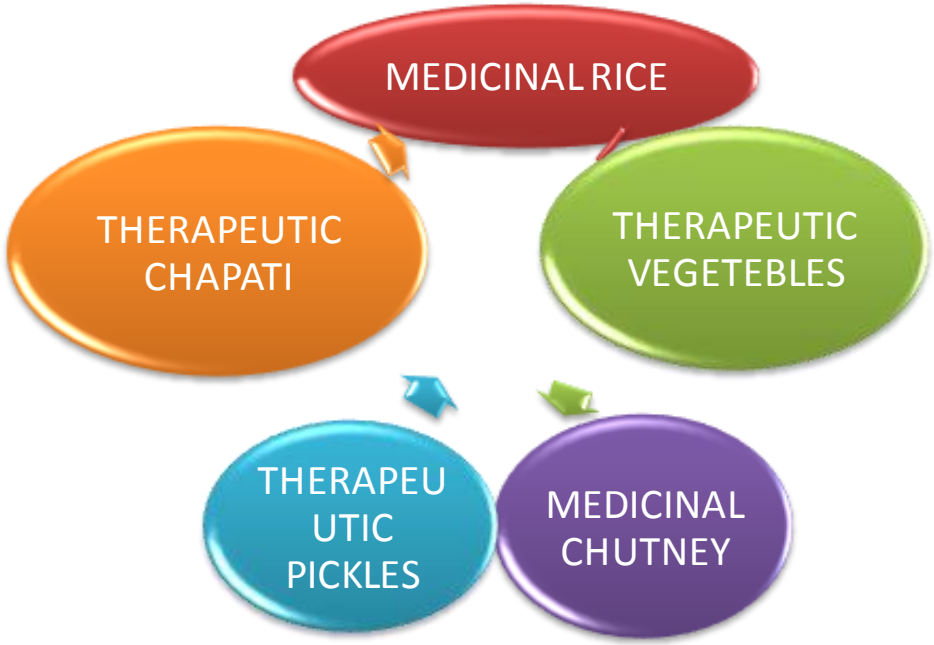
There are many types of herbal dishes prepared and used by the herbal healers of Chhattisgarh to cure various ailments. These dishes are basically prepared by medicinal herbs and are popular in rural and tribal part of the state. **These dishes are used as a supplement of the main treatment**. Method of prepration of dishes and the amount of ingredients added into it has a vast variation, therefore standardization of recipes are must. And it will be a new horizon of research.

According to taste these dishes have been classified in the following manner-

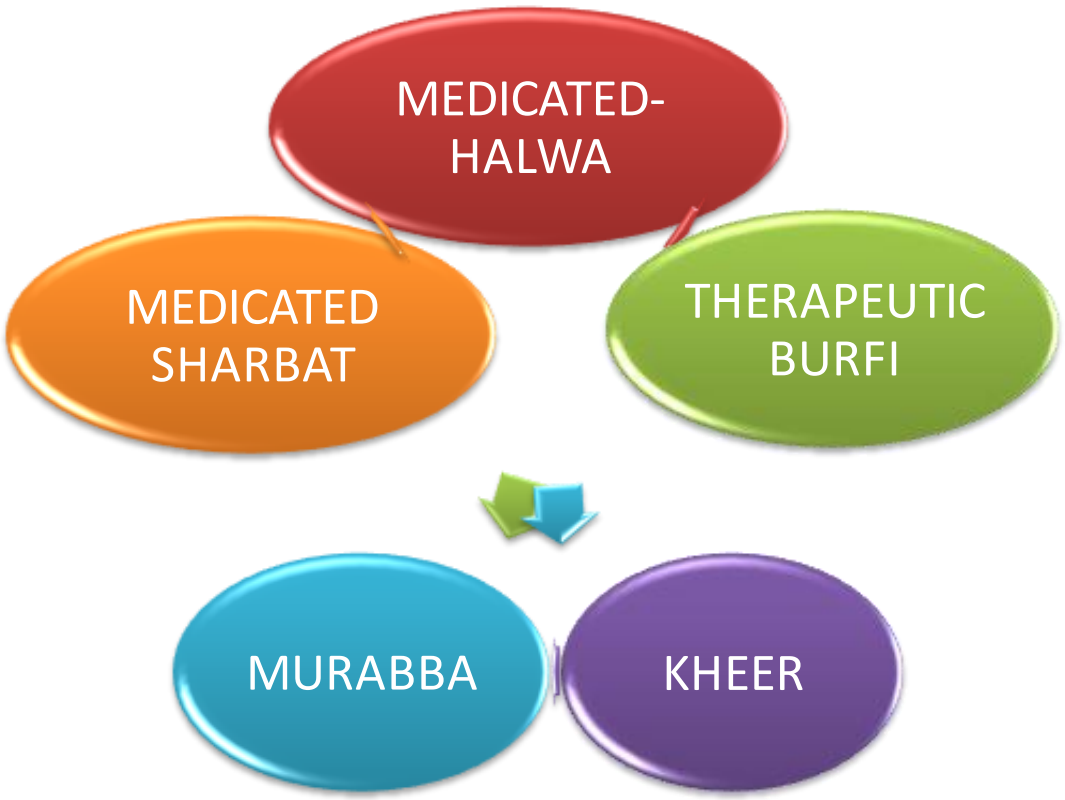
- **Salty Herbal Dishes-** In the group of salty preparation – Cooked Vegetable, Pickles, Roti [Chapatti], Fritters [Bhajiya] and Chutney are commonly prepared.
- **Sweet Herbal Dishes-** In this group - Kheer, Halwa, Burfy, Laddu, Mithai, Sherbats and Murrabas are commonly prepared.

In the rural and tribal belt of Chhattisgarh it is a common trend to give some dietary [medicated] preparations for speedy recovery from the relevant illness in support of main treatment. Most of the preparations are recommended by the herbal healers. Some of them are known by the inhabitants of the state. These medicated food supplements are powerful therapeutic agents also. This concept is similar to that of U.S. and Germany; where herbal remedies are kept in the category of dietary supplements.

Herbal Dishes- Salty



Herbal Dishes - Sweet



4.5.1: Dietary Dishes for the treatment of Dyspepsia-

- **"Babool ka achar" [***Acacia arebica*] – Pickle made from Babool is famous herbal preparation to cure dyspepsia in rural and tribal regions of Chhattisgarh. ***Traditional herbal healers*** are using this dish for the treatment of certain gastrointestinal disorders. Young shoots of the herb is used in making pickle. The process of preparation is similar to that of other common type of pickles.
- **Bans ka athan [***Bombusa arundinacia*] **-** Bans is the local name of Bamboo. The dense forests of Chhattisgarh are rich in natural wild crop of this herb. Bans Ke Athan (pickles) is prepared by using its young shoots. The natives of rural and tribal Chhattisgarh consume this pickle because of its **specific taste**. The traditional healers of Chhattisgarh are aware of its health benefits. According to them, it is helpful in improveing the digestion. It is commonly used to treat dyspepsia.

4.5.2: Dietary Dishes for the Treatment of Diarrhoea-

- **Dhania ka sharbat- [***Coriandrum sativum*] - It is a popular dish for the treatment of diarrhoea. Seeds of the Dhania are soaked in cold water for 3-4 hours and mashed with figures then sugar/sugar candy is added to it. This is used for the patients of diarrhoea. One cup full two times in a day is promising for recovery.

4.5.3: Dietary Dishes for the Treatment of Colic Pain-

- **Beeja phool ka sag [***Pterocarpus marsupium*] – It is a type of cooked vegetable used for the patients of colic pain. Buds and young flowers are used to prepare it is cooked similar to other vegetables.

4.5.4: Dietary Dishes for the Treatment of Constipation and Piles-

For the treatment of constipation, and piles there are many herbal dishes available in Chhattisgarh. Some important dishes are as follow –

- **Van kewach ka sag- [***Mucuna prureins*] - Young shoots of this herb is used for the preparation of this vegetable. The method of cooking is similar to like other leafy vegetable. Van Kevatch Ke sag is popular in Nagri-Sihawa region of Chhattisgarh. It is prepared by using the **young pods**. The natives consume it for its specific taste but the traditional healers are aware of its medicinal uses and properties. They recommend this preparation to the patients having the problem of **constipation**. Some herbal healers are using it for blood purification also.
- **Kharpudi ka sag- [***Ceropegia lawii*] - It is a tuberous vegetable. Underground tuber is used to cook vegetable. The method of cooking is same as the rhizome of colocassia [Arbi].
- **Keo-kand ki chutney- [***Lepidium sativium]* is also a very useful dish to cure colic pain. Rhizome of this herb is used for its preparation. Material required for its preparation are Keukand roots, Namak (Salt), Hari Mirch (Green Chili), Dhania (Coriander), and Lason (Garlic), For its Preparation, the roots are cut into small pieces. These pieces are mixed with other ingredients and with the help of store, crushed into fine paste. This fine paste is known as **Keukand Ke Chutney.**
- **Urid ka laddu-** (*Vigna mungo*) – This herb is popular in all parts of the state. Seeds of this plant are used in making *laddu.* This is a very good appetizer, and useful to treat piles. For its preparation

  Urid seeds, Shakkar (Sugar), Gond (Tree Gum), Wheat flourand Ghee is required. For preparation, Urid seeds are soaked in water

whole night. Next morning seed coats are removed and seeds are crushed into fine paste. This paste is taken in pan and roasted well. Wheat flour is also added and roasting is continued. Gond (tree gum) is deep fried in cow ghee and after frying crushed into fine powder. Sugar is added in the fine powder. This combination is mixed thoroughly with roasted Urd and wheat flour and round shaped Laddus are prepared.

- **Masoor ke Bhajia –** [*Lensesculenta*] – leaves of lentil plants are used in making Bhajia (Fritters). This is also a famous dish in the rural and tribal part of the state to cure constipation. The process of making fritters is similar to that of other general recipes.

4.5.5: Dietary Dishes for the Treatment of Jaundice-

- **Van dal ke Burphi – [***Hygroryza ariatata*] - Roasted seeds of this plant are used in making this dish. It is also a popular among the rural and tribal inhabitants of the state. For the preparation of this dish the required materials are roasted seeds, sugar, cow ghee and besan. For the preparation of this dish besan is roasted in pan with the help of Cow ghee. The roasted seeds are powdered and added in besan. The mixture is roasted further. Sugar is added in form of chashni (Syrup). The mixture is spread on Iron plate and after drying, cut into square pieces. Once prepared in bulk, it is used round the year as per the recommendations of the traditional healers.
- **Mulethi ka sag** [*Glycyrrhiza glabra*] In Chhattisgarh fresh roots are taken for this purpose. It is cooked like the vegetables of other tuberous underground stem.

4.5.6: Dietary Dishes for the Treatment of Asthma and Related Problems –

- **Bhatkatayia phal ka sag-** [*Solenum xanthocarpum*] **-** Seedless green fruit is used to cook vegetable. And it is given to the patient of asthma and related respiratory problems. The process of making Sag is similar to that of cooking process of general vegetables.
- **Chamsur ki chutney-** [*Lepidium sativium*] - Fresh leaves of this plant is used to prepare chutney. According to the herbal healers of the Chhattisgarh this is curative as well as preventive for the respiratory troubles.The herb growers are cultivating this herb commercially as medicinal crop. In reference literatures related to different systems of medicine, Chandrashoor is mentioned as valuable medicinal herb. According to Ayurveda, it is not, bitter, tonic, galactagogue, aphrodisiac, cures dysentery, good for abdominal pain, useful for blood and skin diseases, tumors, injuries, and eye diseases. For the preparation of this dish the required materials are chandrashoor leaves, namak (Salt), and other spices. For the preparation of this dish the leaves and other ingredients are mixed thoroughly and with the help of stone crushed into fine paste. This fine paste is known as Chandrashoor or **Chamsaur Ke Chutney**. The spices are added in less quantity just for taste.
- **Bahera ka halwa –** [*Terminalia bellirica*] Halwa cooked with the help of fresh fruit rind. It is used to treat respiratory troubles. Materials required for its preparation are bahera fruit rind, Wheat flour, cow ghee and sugar. Wheat flour is roast well in pan with the help of cow ghee. Separately, bahera fruit rinds are also roasted in cow ghee. The roasted rinds are added in the roasted wheat flour. After further roasting, sugar is added.

- **Annanas ka sharbat –** [*Ananus cosmosus*] – Sharbat prepared with the help of fresh fruit of pine apple is useful in the treatment of respiratory troubles. The process of making this sharbat is very simple. Sugar, cold water and pine applefruit extract is required for it.

4.5.7: Dietary Dishes for Blood Purification-

- **Dudhi ka sag –** [*Wrightia tomentosa*] Leaves of bottle gourd are cooked like other green leafy vegetable.
- **Van kevanch ke sag –** [*Mucuna pruriens*] - Young shoots are used for blood purification and cooked like other common vegetables.
- **Patal konhara ka sag –** [*Pueraria tuberosa*] - Underground rhizome is used and cooked like other vegetable.

4.5.8: Dietary Dishes for the Treatment of Gynecological Problems-

- **Nirgundi patta ka sag-** [*vitex negundo*] - Fresh leaves are cooked like other leafy vegetables.
- **Nirgundi patta ka sherbat –** [*vitex negundo*] - Fresh leaves are used to prepare sharbat using sugar and water.
- **Somi van ke roti –** [*Saraca interrupta*] - Fresh stem bark is mix with wheat flour to prepare chapaties.
- **Petha ka halwa –** [*Benincasa hispida*] **-** Unripe flesh of fruit is used to prepare halwa. This preparation is considered excellent sex tonic, good for gonorrhea, and used to improve general resistance power.
- **Sita ashok chali -** [*Saraca asoca*] - Fresh stem bark is used as an ingredient to make halwa.
- **Ajwain ka halwa –** [*Carum copticum*] **-** Dry seeds are mix with wheat flour to prepare halwa.

4.5.9: Dietary Dishes for the Treatment of Rheumatism and Gout -

- **Charota bhaji** [*Cassia tora*] **-** Fresh [new] leaves are used and cooked like other green leafy vegetable.
- **Bach ka sharbat –** [*Acorus calamous*] **-** Shed dried roots are used to prepare sherbat. Excess intake on the regular basis is toxic.
- **Aundi Beeja ka sharbat-** [*Ricinus communis*] - Dried seeds are used to prepare sherbats.
- **Lasun ka murraba-** [*Allium sativum*] **-** Murraba prepared by using follicles of lasun is beneficial for the treatment or gout.

4.5.10: Dietary Dishes for the Treatment of Leucoderma -

- **Bathua bhaji –** [*Chenopodium*] **-** Fresh leaves are cooked as other green leafy vegetables.

4.5.11: Dietary Dishes for the Treatment of Bone Fracture -

- **Bhelawa ka halwa –** [*Semecaepus Anacardium*] - Halwa prepared with the help of fresh fruit, sugar and wheat flour. It is good for the treatment of bone fracture.

4.5.12: Dietary Dishes for the Treatment of Heart Troubles-

- **Kaitha ka sharbat –** [*Feronica elephantum*] - Fresh fruit juice is used in case of heart troubles.

4.5.13: Dietary Dishes for the Treatment of Diabetes-

- **Bar murraba –** [*Ficus benghalensis*] - Murraba prepared with the help of fresh fruit of bar is used in the treatment of diabetes.

4.5.14: Dietary Dishes for Vigor and Vitality-

- **Chiraungi ke burphi –** [*Buchanania lanzan*] **-** Seeds are used to improve general vigor and vitality. Seeds are processed with sugar to prepare burfi.

4.6- ACTIVE PRINCIPLES OF SOME SELECTED HERBS

Though a number of herbs are used in the entire Chhattisgarh state but there are certain herbs which are most commonly used by the majority of people. The active principles of these selected herbs have been described over here. Active principles are the constituents which are responsible for the medicinal properties of the specific herb. Amla, Tulsi, Gwarpatha, Erand, Apamarg, Lasun, Pippali, Shunthi, Nirgundi, Ashwagandha, Guduchi, Harjor, Mahanimb, Satawari, and Bakuchi are the herbs used by most of the population of Chhattisgarh.

- **Amla**- [Indian gooseberries] [*Emblica officinalis*] It is used as medicine to cure the disorders of almost all systems of our body. Fruit contains protein, fats, fibers, carbohydrates, vitamin C and nicotinic acid. Certain phytochemicals are also present in it. The most important are gallic acid, ellagic acid, flavin and glucose. Seeds contain linoleic acid, linolenic acid and oleic acid.
- **Tulsi-** [Holy basil] – [*Ocimum sanctum*] It is also used as a medicine to cure various disorders. From nutritional point of view it is not very rich but small amounts of ascorbic acid and carotene are present in it. In addition to these essential oils, alkaloids, glycosides, saponin and tannins are present in it.
- **Gwar patha**- [Allover a] – [*Aloe barbadinsis*] Juice, gel and paste of the fleshy leaves are popular medicinal form of this herb. Leaves contain carbohydrates, protein, iron, calcium, potassium and magnesium. It also contains malic acid, tartaric acid, tannins and citric acid. Because of these phytochemicals the herb is medicinally important.
- **Erand** – [Castor oil plant] [*Ricinus communis*] It is a popular multifunctional herb. Various forms of this herb are prevalent in Chhattisgarh. Root contains starch; seed contains 50% oil, and protein.

The oily portion of the seed contains glyceredes, stearic acid and crystals of calcium oxalate.

- **Apamarg** – [Prickly chaff flower] [*Achyranthus aspera*] It is a waste land weed of the state. Apamarg is also a multifunctional herb therefore it is used in the treatment of many disorders. Nutritionally it is a poor herb but seed contains small amount of oligosaccharides. A large number of phytochemicals are present in it making this herb a powerful antibiotic, digestive, expectorant, and anthelmintic. Saponin, steron, and alkaloids are important phytochemicals resent in it.
- **Lasun** – [Garlic][*Allium sativum*]- It is also highly prevalent herb in the state. In Chhattisgarh it is used for the treatment of not only heart troubles but also for diabetes and piles. Garlic contains protein-6.3%, fat .1%and certain amino acids like leucine and methionine. Garlic bulb contains a mixture of polysaccharides containing peptic acid. There are two sulphur compounds Allicin allisalin I and allisalin II.
- **Pippali** – [Long pepper] [*Piper longum*] – It is found in the hotter parts of India. In Chhattisgarh it is used for the treatment of cough, disorders of spleen, diabetes and dysponea.

  Plant contains essential oil consisting of long chain hydrocarbons, piper longumine, piper longuminine, piperine and methyl3, 4, 5, trimentoxycinnamate in roots.
- **Shunthi**-[Ginger] [*Zingiber officinalis*] - The underground rhizome of this plant is used to cure a number of disorders. It is digestive, carminative, antioxidant, and used in the treatment of digestive disorder, flatulence, dysponea and rheumatoid arthritis.
- **Nirgundi [**Five leaved chaste tree] It is a famous anti-inflammatory and anti- venom.

- **Ashwagandha** – [Winter cherry] It is a very good tonic, immunomodulator. It contains alkaloids, glycosides, sugars, amino acids, essential oils, glucose, protein, fiber, and calcium and iron.
- **Guduchi** – [Tinospora] This plant contains starch, glycosides, essential oil, proteins, calcium, phosphorus and gilosterol.
- **Harjor** – [Bone setter] This plant is rich in protein, fat and wax, fiber, carbohydrates, mucilage and pectin. This plant is remarkably rich in vitamin C. Calcium oxalate crystals account for the irritating action of the fresh stem.
- **Mahanimb** – [*Ailanthus excels*] Stem bark of this herb yields beta sitosterol, 2, 6-dimethoxyhenzoquinone.
- **Satawari** – [*Withania somnifera*] It contains starch, reducing sugar, glycosides, amino acids, essential oils, glucose, protein, fibers, amino acids, tannins, flavonoids, calcium and iron.

CHAPTER - 5

Summary And Conclusion

CHAPTER V
SUMMARY AND CONCLUSIONS

Summary-

Medicinal herbs are moving from fringe to mainstream use, with greater numbers of people are seeking remedies and health approaches free from side effects caused by modern allopathic drugs. Now a day a considerable attention has been paid to utilize eco-friendly and bio-friendly plant based products for the prevention and cure of different human diseases.

Recently the WHO has stated that 80% of the world's population is using herbal medicine for their health care. In Germany and France many herbs and herbal extracts used as prescription drugs.

Ancient literature also mentions herbal remedies for age related diseases namely memory loss, osteoporosis, diabetic wounds, etc.. About 1500 plants with medicinal uses are mentioned in ancient texts and around 800 plants have been used in traditional medicine.

India has a rich traditional knowledge and heritage of herbal medicine. And our country is one of the 12 mega-biodiversity centers having over 45,000 plant species.

In order to promote Indian Herbal Drugs, there is an urgent need to evaluate the therapeutic potentials of the drugs as per WHO guidelines. World health organization has also paid serious attention on documentation of knowledge from different communities and ethnic groups.

In Chhattisgarh there is a paucity of data on the herbal and home remedies prevalent among the inhabitants. Therefore the current study has been designed.

The main objectives of the study are to record and document the knowledge of herbal and home remedies prevalent among the people of Chhattisgarh. And to assess the herbal dishes popular among them; for the treatment of various illness. According to the guidelines suggested by WHO, an ***Ethnographic research design*** was used. A ***purposive sampling*** was used to select the sample. Total ***300 subjects*** were selected, 100 each from urban, rural and tribal area of the state. Subjects were selected from ***central, northern*** and s***outhern*** part of the Chhattisgarh. To collect the information from the target population an ***open ended questionnaire*** was used. This type of questionnaire allows the descriptive response from the respondent. The average number of herbs reported by the respondent for the treatment of a particular disorder/ diseases was tabulated and means value was calculated. The result was presented for the first five highly prevalent herbs. [reported by the highest number of subjects].

Results of the study on herbal and home remedies prevalent among the urban, rural and tribal Chhattisgarh were presented.

*"**The traditional use can provide valuable clues for selection, preparation and indication for use of herbal formulation; as efficacy has been established by common use. The historical use provides the source to study the scientific plant species with potential to be used in particular disease.**"*

Herbal and Home Remedies Prevalent in Urban Chhattisgarh

India has a tradition of codified health care system: Ayurveda, Unani and Siddha, function mainly through (1) folk stream and (2) classical stream. The former is oral tradition, practiced by villagers and tribal communities, while the later comprises the codified system.

No survey on the herbal and home remedies prevalent in the urban society of Chhattisgarh has been reported till date. This study provides

sufficient ground to believe that traditional medicinal practice; using native plants is alive well functioning in the study area. Despite dense urbanization, medicinal plants still play a key role in the health care of the urban people. The data collected from the urban society of the state has been compiled as follows.

Anorexia, Hyper-acidity, Flatulence, Peptic ulcer, Constipation, Intestinal worms are some common disorders related to the digestive tract; frequently found among the inhabitants. Sonth (*Zingiber officinalis*), Beal (*Aeglo marmelos*), Amalki (*Emblica officinalis*), Errand oil (*Ricinus commnis*), Haritiki (*Treminallia bulache*), Vayvidang (*Embelia ribes*), Ilayachi (*Elettaria cardamom*), and Bathua bhaji are some common herbs used to cure these ailments. Certain *poly herbal combinations* are also used by the urban population like Kumarisava (fermented product of aeglo marmelos), Drakshsava (fermented product of grapes), and Lavan bhasker churn. There use was reported by 80%, 76%and 88% of the subjects respectively.

Asthma, Bronchitis, Cold, Cough and certain upper respiratory tract infections are common among the urban people of the state. Adulsa (*Adhatoda vasika*), Tulsi (*Ocimum sanctum*), Jatamansi (*Nordatachys jatamasi*), Pippali (*Piper longum*), and Sarpagandha (*Rauwlfia serpentina*), are the common herbs; used to cure these respiratory ailments.

Rheumatoid arthritis and Gout are the frequently prevalent diseases in urban inhabitants. Errand leaves (*Ricinus communis*), Rasna (*Inula helemium*) and Gugulu leaves (*Commiphora*), are the herbs used by 64%, 82% and 64% of people, respectively. In the urban belt of chhatisgarh people are in a habit of using many polyherbal combinations which are readily available in the market. Amongst them; *mahayograj gugulu* (44%), *maharasnadi kwath* (80%) and *vatchintamani ras* (70%); are important. This study shows that many single

herb drugs are also available in the markets which are effectively used to cure these conditions.

Certain other herbs which have been reported by the people of urban Chhattisgarh to cure various ailments like gynecological problems, chronic metabolic diseases, convulsions, fevers, anaemia and the bites of poisonous insects and pets have also been taken into consideration.

Herbal and Home Remedies Prevalent in Rural Chhattisgarh

In the rural area of Chhattisgarh, people prefer traditional medicine because of cultural rooted faith on the indigenous healers, their easy accessibility, low cost and cultural acceptability, elaborated patient-healer relation, long term family association, friendly attitude of the healers and so on. A wide range of herbal and home remedies are prevalent in Rural Chhattisgarh to cure various ailments. Living close to nature, rural people have acquired knowledge on the natural resources that exist around their habitat in the forest ecosystem. These people are using different formulations made out of plants to cure various ailments.

The present investigation reveals that the most common health ailments of Rural Chhattisgarh are chronic digestive disorders, respiratory disorders, skin disorders and some chronic conditions like diabetes and high blood pressure. **Sickle cell anemia**, **Jaundice, Leucorrhoea, Epilepsy** and **Paralysis** are also the problems which are present in higher frequencies.

Herbs like Amla (*Emblica officinalis)* 87%, Haritiki (*Treminallia chebula*) 66%, Kutja (*Holarrhena antidysenterica*) 47%, Sarpagandha (*Rauwlfia serpentina*) 51%, Zimikand (*Amorphophallus campanulatus)* 44%, Asthisamahari (*Cissus quadrangularis)* 77%, Indrayan *(Citrullscolocynthis*) 47%, Babool (*Acacia nilotica*) 67%, Salparni (*Desmodium gangeticum)* 77%, Guruchi *(Tinospora cordifolia*) 88%, Bidarikand (*Pueraria tubrrosa*) 77%, are frequently used to cure digestive

troubles. The most common respiratory troubles are cold, cough, and bronchitis. Tuberculosis is present in lesser extent then tribals. People of the rural area use Mulethi *(Glycyrriza glabra)* 78%, Pipli (*Piper longum*) 73%, Sarpagandha (*Rauwlfia sarpentina*) 33%, Satawar root (*Asparagus recemosus)* 50%, Mandookparni (*Centella asiatica*) 67%, Nirgundi root (*Vitex nergundo*) 67% and Dalchini (*cinnamomum zeylanicum*) 53% to combat the respiratory problems.

Several plant species like Apamarg *(Achyranthes aspera)* by 50%, Errand *(Ricinus communis)* by 44%, Salparni *(Desmodium gangeticum)* by 53% and Asthisamahari (*Cissus quadrangularis)* by 87% of people used to cure rheumatoid arthritis, joint pain muscular pain and bone fracture. Patients of epilepsy are present in higher percentage in the rural belt of the state. This disorder is associated with general mental weakness**.** Jatamansi *(nardostachys jatamansi),* Ashwagandha (*Withania somnifera*), and Jungle hurhur (wild mustard; *cleomaceac*) are the some important herbs which are used to cure this disorder by 55%, 83% and 23% respectively.

Gonorrhea, white discharge and delivery complication are some of the gynecological disorders frequent among rural people. Bidari kand *(dioscorea bulbifera*) by 59%, Kali musli (*curculigo orchioides*) by55%, Apamarg (Achyranthes aspera) by 54% Patal konhra by 77% and Guruchi (Tinospora *cordifolia)* by 93%of people used to cure the above conditions. The knowledge of rural people for the use of contraceptives is also rich. They use Gatarn seeds *(Mucuna pruriens),* Gular (*Ficus racemosa*) Lalapalash (*Butea monosperma*) and Gomchi (*Abrus precatorius)* for the purpose of family planning.

Herbal and Home Remedies Prevalent in Tribal Chhattisgarh

All plants are reported to be medicinal, having medicinal value of curing various ailments. The occurrence of diseases and their treatment has been discussed according to a sequential order i. e. herbs prevalent in the treatment of gastrointestinal disorders, respiratory disorders, musculoskeletal

disorders including bone fracture, disorders of central nervous system, gynecological disturbances, fevers and infections, chronic metabolic diseases like diabetes, heart diseases, anemia, convulsions, skin diseases, bites of dog, snake, scorpion and certain poisonous insects. The medicinal plants used by the tribal population in some of the said ailments are as follows-

For the treatment of gastrointestinal disorders -88% subjects use Amla **(***Emblica officinalis*), 62% Malkangini (*Phyllanthus niruri***),** 67% (*Celestrus seed)*, 58% Green grass *(Cynodon dectylon)*, 67%Apamar, (*Achyranthes aspera*), 56% Sooran kand (*Amorphophallus campanulatus***)** and 67% Babool (*Acacia Arabica)*. The common troubles seen in tribes; related to digestive tract are diarrhoea, dysentery, flatulence, acidity, intestinal worms, vomiting and jaundice.

Various ailments related to respiratory tract are cough, cold, asthma and tuberculosis; commonly treated either by single herb or mixture of more than one herb. 67% subjects use Dhatura (*Dhatura metel),* 59% Bhilawa *(Semecarpus anacardium),* 56% Amaltas (*Rhombi folia cassia fistula), 54%* Nirgundi (*Vitex nergundo***)** and 85% Vasaka (*Adhatoda vasika*) to cure respiratory troubles. Several plant species like – Kuchla (*Nux vomica*) by56%, Rasna (*Inula helenium*) by85% Gokshur (*Pedalium murex)* by45%, and Harjor (*Viti cissus quadrangularis*) by85% was used to cure rheumatoid arthritis, joint pain (gout), muscular pain and bone fractures.

Insomnia, generalized mental weakness and epilepsy are the common complications related to central nervous system. Pila hurhur (*Cleoma viscasa*) and Manduk parni *(hydrocotyle asiatica*), are the herbs used as memory tonic to enhance the mental abilities by 59% and 67% subjects respectively. Sarpagandha (*Rauwolfia serpentina)* is generally given for the treatment of mental imbalance by 73% of users.

It is observed that some medicinal herbs including tuberous plant species are used by the people of tribal chhattisgarh to cure various venereal diseases, menorrhage and to increase fertility. The knowledge of tribal people about the contraceptives, which is one of the informal innovations by them, is quite relevant in present day situation. In this context the use of Atibala (*Abution indicum*) was suggested by 78%of subjects, Nadihing (Gradinia *gummifera)* by 56% (contraceptive), Khamhar (*Gemlina arboria*) seeds for abortion by 55% Dudhi (*Oxystelma esculentum*) for lactation by 51% Bhenda (Hibiscus *populana)*, for leucorrhoea by 56% and Indrayan (*Citrallus colocynth)* by 86% Indrayan chooti *(Coccmus trioonus)* by 60% and 60% of subjects Indrayan lal (*Trichosanthus palmeta)* was used to develop sterility.

Due to absence of proper hygiene, tribal people are infected by different types of infections; associated with fever. Tuberculosis is the most common finding of the tribal belt. Adulsa *(Adhatoda vasika*) by 60%, Bhuinimb (*Andrographis peniculata*) 40%, Amaltas (*Cassia rhombifolia*) 30%, Rohan (*Soymida febrifuga*) 30%, Sarpagandha (*Rauwolfia serpentina*) 60%, and Bantulsi (*Ocimum canum*) used by 70%, of the subjects to cure tuberculosis and some chronic fevers.

Certain chronic problems like, anemia and convulsions are most frequent among tribal. Various herbs used to cure diabetes are Amla (*Emblica officinalis*), Shisham (*Dalbergia sissoo*) and Beeja (*Pterocarpus maesupium*). Although modern techniques of diagnosis are quite costly and not approachable for the tribal people, they are using the traditional method of disease diagnosis. The incidence of heart problem is rare in tribes. Arjuna (*Terminalia arjuna)* by 89%, Sarpagandha (*Rauwolfia serpentina*) by 78%, Lasun (*Allium sativum*) by 88%, and Hing (*Asofoitida*) by 63%; are the herbs used to control blood pressure. Rakta vidar (*Trecomella undulata*) by 56% and Swarn chhiri (*Argemone mexiana*) by 55% are the most frequently used herbs to

control anaemic problems.

Skin diseases like wounds, boils, cut, injury, and carbuncle are common among tribals. Nirgundi leaf (*Vitex nergundo*) was reported by 66% and Charota (*Cassia tora*) by 66% are the herbs mainly used to cure the skin diseases. Most of the skin diseases may be cured by the application of poultice or a paste which is applied locally. Paste of fresh root and stem of Harjor (*Cissus quadrangularis)* was reported to be used by 87% of people to cure the skin problems. Stones of urinary tract, bladder, kidney and inflammation of urinary tract are some common diseases of urinary system in tribal area. To treat these problems 45%people are using Lajwanti (*Smilex mecrophylla*), 73% Tikhur (*Curcuma angustifolia*), 76% Ramdatun and 56% Bidarikand *(Tacca aspera*).

Insect, dog and snake bites are also frequently prevalent in the tribal areas. Tribal people have excellent knowledge of ***religio-spritual*** measures. They have also an excellent knowledge of the herbs to cure these problems. To recover from this illness Isharmool and Salparni is common. They use different types of ***mantra*** and ***tantra*** to get speedy recovery. In the deep forest pocket; tribal people use Sadabahar leaf juice (*catharanthes roseus*) for the treatment of honey bee bite.

It is observed that in general; dosage and duration of medicines depend on the intensity of the disease and the age of the patient. Tribal people harvest the plant part which is useful from medicinal point of view, at particular growth period or season. The period before flowering and fruiting is considered best, because at this time the active principles are present in its maximum concentration in the plant.

CONCLUSION-

Public, academic and government interest in traditional medicine is growing exponentially due to the increased incidence of the adverse drug reactions and economic burden of the modern system of medicine. This study shows that "**the traditional knowledge and domestic usage of herbal medicine for the treatment of various ailments among the people of Chhattisgarh is a major part of their life and culture".**

Chhattisgarh is rich in herbal medicines with its diversified traditional uses. People of Chhattisgarh have a strong belief in the efficacy and success of herbal medicines. It has been observed that elderly people are the custodian of traditional uses of herbs while the younger generation is rapidly losing their rich heritage of use of traditional knowledge.

According to Chhattisgarh Medicinal Plant Board, 192 species of herbs are found in all over parts of the state. In the current study there are 140 types of herbs have been identified, which are being used by the people of the state. Out of these herbs more than 50% are used for the purpose of oral medicine and a few of them are used for local application.

Despite dense urbanization herbal medicines still play a key role in the health care of the urban inhabitants. Although the tendency of the **urban people** is to select and use the herbs in the form of readymade capsules, oils, decoctions, churns, juices etc. This provides sufficient ground to believe that traditional medicinal practice using natives' plants and readymade herbal preparations from the market is alive and well functioning in the urban areas too.

The **ethnic** and **rural people** have preserved a large bulk of traditional knowledge of medicinal uses of plants growing around them.These people are transmitting their knowledge to their successive generation through the

word of mouth. Most of the inhabitants of the rural and tribal areas are getting medicinal herbs from the roadside weeds or as wild crops in their surroundings. In the rural and tribal areas most people formulate and dispense their own therapeutic preparations. Most of these formulations don't have drug regulatory approvals to demonstrate their safety and efficacy to ensure their safety and efficacy. To ensure their safety and quality standardization should be done.

Subjects from rural and tribal belt have strong belief on religo- spiritual phenomena. In both the areas there are two types of herbal doctors namely **herbalist** and **magico- religious practioners.** Both these healers handle a wide range of illnesses. Herbalists prepare a variety of medicines using plants, animal products, insects, reptiles and birds. The magico-religious healers (Baigas and Guniyas) believe that specific spirit causes ailments. Therefore these healers apply a well set systemic process of **Mantra** and **Tantra** on patient to recover from illness. Besides this tribal people have their holy temples in their respective villages, where they go along with their patients, and pray for their early recovery. These healers have a strong belief on supernatural causation of illness and a significiant role of magico-religious practices in their recovery.

There is a need to integrate traditional medicine system into modern medicine practices. This requires a clinical validation with controlled clinical trials. The reported and documented side effects should be analyzed for single and for polyherbal combination. Thus the *laboratory based* development of herbal medicines can be approach by the proper utilization of rich traditional source of knowledge; with integrated approach, for the welfare of mankind.

RECOMMENDATIONS

The recommendations that have emerged out of this study are listed below-

- The traditional system related to cure of various ailments is fast disappearing, in general in the entire country and specifically in the herbal state of Chhattisgarh. So there is an urgent need of recording all scattered information related to the use of herbal and home remedies through out the country and specifically in the hertbal state of chhattisgarh.
- The herbs and herbal remedies, as recorded here, need Phytochemical and pharmacological screening for their active principles and clinical trial for therapeutic action.
- Certain herbal food recipes are also available in the rural and tribal areas of the state, which are effectively used in the treatment of various disorders. The nutritional, Phytochemical as well as pharmacological analysis of these recipes can provide a new boon to the researchers.
- The herbal healers like Vaidyas and Baigas should be given social as well as economic security so that they can work enthusiastically and promote herbal remedies amongst the society.
- There is a need to organize training programs for herbalists working in deep forest pockets for identification of correct herbs in order to avoid any toxicity in the herbal preparations.
- There is an urgent need to formulate strategies to popularize the traditional knowledge of herbal remedies involving various channels like print media, electronic media etc.
- Inter-disciplinary researches are required for the scientific validation of existing herbal knowledge.
- A number of important herbs at the verge of extinction. There is a great challenge to save these precious species of herbs.

Bibliography

BIBLIOGRAPHY

1: Complete German Commission E Monograph, "Therapeutic guide to Herbal medicine" By Blumenthal, Burse, and Gold berg, Gruon Wold, Hall, Klein, Riggins and Rister. Printed in USA 543. Electronic publication by Bonnie Glendinmey

2: Comp odium on rules, policies and stratigy by Agrawal SC. Published by Chhattisgarh state medicinal plant board. Raipur C.G

3: Kothari C. R. "Research Methodology- Methods and Techniques. New age international publisher. (2003).

4: Jean J Sehensul, "What is Ethnography- Introduction to ethnographic research design. Available at **www.incommunityresearch.org.**

5: ICMR Ethical Guidelines for Bio Medical Research on Human Participants. By ICMR, New Delhi (2006)

6: nyam, news,Caribbean Food and Nutrition Institute. UWI Campus, P. O. 140, Kingston 7, Jamaica W.I.

7: Karrie Heneman, Assistant Project Scientist, University of California. Agricultural and Natural Resources, Communication Services, 6701 San Pblo Avenue, 2nd floor, Oakland, California – 94608-1239.

8: Journal of Documentation, Vol-64 Issue-5:2008.

9: S. B. Rifkin, S. D. Hartiey, "Learing by doing: Teaching Qualitative Methods to Health Care Persone.

10: Science Alert. [All volumes available online upto March 2011]

11: American journal of Chinese Medicine. [All Vols available online upto March 2011]

12: Journal of Alterative and Complementary Medicine. [Monthly online upto March 2011]

13: American Journal of Clinical Nutrition. [All vols available online upto March 2011]

14: BioMed Central. [All data base available online]

15: Bulletin of world Health Organisation Vol 89.

16: Nature Medicine 5 May 2010.

17: Journal of Ethnomedicine and Ethnopharmocology.[All vols available online upto March 2011].

18: Journal of Ethnobiology. [All vols available online upto March 2011]

ANNEXURE- I

BOTANICAL NAME OF THE HERBS ALONG WITH THEIR VERNACULAR NAME-

S.No.	Vernacular Name	Botanical Name
1.	Adrak/sonth	*Zingiber officinale*
2.	Adulsa	*Adhatosa vasida*
3.	Ajmod	*Apium graveilens*
4.	Ajwayin	*Carum copticum*
5.	Amaltas	*Cassia rhombifolia*
6.	Amarbel	*Cuscuta reflexa*
7.	Amola	*Emblica officinalis*
8.	Amrud	*Psidium guajava*
9.	Anar	*Punica granatum*
10.	Anjeer	*Ficus carica*
11.	Annanas	*Ananas cosmosum*
12.	Apamarg	*Achyranthus aspera*
13.	Aparajita	*Clitoria ternatea*
14.	Arjun	*Terminalia arjuna*
15.	Ashok	*Saraca indica*
16.	Ashwandha	*Withania somnifera*
17.	Babool	*Acacia nilotica*
18.	Badi danti	*Jatropha curcas*
19.	Badi haritiki	*Terminalia chebula*
20.	Baheda	*Terminalia bellirica*
21.	Baigum	*Solanum melongena*
22.	Bakuchi	*Psoralea corylifolia*
23.	Bakul	*Mimusosops elengi*
24.	Bala	*Sida cordifolia*
25.	Bans	*Bambusa arundinacia*
26.	Bat	*Ficus benghalensis*
27.	Bathua	*Chenopodium albu*
28.	Beeja	*Pterocarpus marsupium*
29.	Bhatkataya	*Solenum xanthocarpum*

30.	Bhelawa	*Terminalia bellirica*
31.	Bhengra	*Ecliptaalba [rice weeds]*
32.	Bhui amla	*Phyllanthus niruri*
33.	Bhui nimb	*Andrographis paniculata*
34.	Bilve	*Aegle marmelos*
35.	Brahmi	*Bacopa monnieri*
36.	Chamsur	*Lepidium sativiun*
37.	Charota	*Cassia tora*
38.	Chaulai	*Amafanthus spinosus*
39.	Chauringi	*Buchanania lanzan*
40.	Cheed	*Pinus longifolia*
41.	Chirata	*Swertia chirayata*
42.	Chitrak	*Plumbago zeylanica*
43.	Choti pipal	*Ficus religiosa*
44.	Cystone	*An ayurvedic medicine use to cure renal stone*
45.	Dalchini	*Cinnamomum zeylanicum*
46.	Daru haldi	*Berberis aristata*
47.	Dauna	*Artemissia vulgaris*
48.	Dhania	*Coriandrum sativum*
49.	Dudhi	*Wrightia tomentosa*
50.	Elachi	*Elettaria cardamomum*
51.	Erand	*Ricinus communis*
52.	Gajar	*Daucus carota*
53.	Gataran seed	*Caesalpinia bonduce seed*
54.	Ghrit kumari	*Aloe barbedensis*
55.	Giloy	*Tinospora cordifolia*
56.	Gokshur	*Tribulus terrestris*
57.	Gudmar	*Gymnema sylvestre*
58.	Guggulu	*Commiphora mukul*
59.	Gular	*Ficus glomerata*
60.	Haldi	*Curcuma domestica*
61.	Hari doob	*Cynodon dactylon*
62.	Harjor	*Cissus quadrangulatris*
63.	Harsingar	*Nyctanthes arbor tristis*
64.	Hing	*Ferula foetida*
65.	Indrayan	*Citrullus colocynthis*

66.	Jamun	*Syzygium cumini*
67.	Jatamansi	*Nardostachys jatamansi*
68.	Jethi madhu	*Glycyrrhiza glabra*
69.	Kadamb	*Anthpcephalus cadamba*
70.	Kaitha	*Feronica elephantum*
71.	Kalahari	*Gloriosa superb*
72.	Kali mirch	*Piper nigrum*
73.	Kanchnar	*Bauhinia variegate*
74.	Kankauha	*Comnelina forskalii*
75.	Kantakari	*Solanum xanthocarpum*
76.	Karang seed	*Pongamia pinnata*
77.	Karela	*Momordica charantia*
78.	Katu parni	*Argemone maxicana*
79.	Kela	*Musa sapientum*
80.	Kewach	*Mucuna pruriens*
81.	Kharpudi	*Ceropegia lawii*
82.	Khatta	*Acacia catechu*
83.	Kuchla	*Strychnos nux vomica*
84.	Kulu beeja	*Sterculia wens*
85.	Kutja	*Holarrhena antidysentrica*
86.	Lal punarnava	*Boerhaavia diffusa*
87.	Lasoda	*Cordiamyxa fruit*
88.	Lasun	*Allium sataivum*
89.	Laung lata	*Quisgualisivdica*
90.	Long	*Syzygium arometica*
91.	Mahabala	*Sida rhombifolia*
92.	Mahanimb	*Melia azedarach*
93.	Makoy	*Solanum nigrum*
94.	Malkangini	*Celastrus paniculatus*
95.	Mandook parni	*Centella asiatica*
96.	Masoor	*Lansesalenta*
97.	Meethi neem	*Murraya kienigii*
98.	Methi	*Yrigonella foenum graecum*
99.	Mircha	*Capsicum annum*
100.	Mooli	*Raphanus sativus*
101.	Nag daman	*Sansevieria roxburghina*

102.	Neem	*Azardica indica*
103.	Nirgundi	*Vitex negundo*
104.	Palak leaf	*Spinacia oleracia*
105.	Palash	*Butea frondosa koenex*
106.	Papal	*Ficus religiosa*
107.	Papita	*Carica papaya*
108.	Patal kumhra	*Pueraria tuberosa*
109.	Pathar chur	*Bryophyllum calycinum*
110.	Patta gobhi	*Brassica oleracea*
111.	Petha	*Benincasa hispida*
112.	Pila vasa	*Barleriaprionitis*
113.	Pippali	*Piper longum*
114.	Pyaj	*Allium cipa*
115.	Ram datun	*Smilex mecrophylla*
116.	Ram tulsi	*Ocimumsanctum*
117.	Rasna	*Plumeria acutifolia*
118.	Sadabahar	*Catharanthes roseus*
119.	Safed musli	*Asparagus adscendens*
120.	Safed musli	*Chlorophytum borivilianum*
121.	Sapta parna	*Alstoniascholris*
122.	Sarpagandha	*Rauwolfia serpentina*
123.	Sarpunkh	*Tephrosia purpurea*
124.	Satawari	*Asperagus racemosus*
125.	Semal	*Salmalia malabarica*
126.	Shalparni	*Desmodium gangeticum*
127.	Shankh pushpi	*Convolvulus pluricaulis*
128.	Sitaphal	*Annona squamosa*
129.	Somi van	*Saraca interrupta*
130.	Sonpatha	*Oroxylum indicum*
131.	Sooran kand	*Amorphophalluscompanulatus*
132.	Suraj mukhi	*Helianthus annuss*
133.	Swarna chirchiri	*Argemone mexicana*
134.	Tej patta	*Cinnamomum tamala*
135.	Til	*Sesamum indicym*
136.	Tinapniya bhaji	*Oxalis coriculata*
137.	Vacha	*Acorus calamus*

138.	Van kevanch	*Mucuna prurins*
139.	Vayvidang	*Embelia ribes*

ANNEXURE II

Questionnaire

Serial number-

Name Age-

Address- Sex-

Profession- - business/ service/ house wife/ farmer/ herbal healers/baigas.

Educational status- below metric/ metric pass/ graduate/ post graduate/

Professional degree

Family structure - nuclear/ joint

Number of family members-

Any chronic diseases prevalent in the family- if yes give the details about the disease and its treatment.

From where do you get the herbal medicines-?

Why do you believe in herbal medicines – state the cause-1 safety 2 efficacy 3 law cost 4.less side effect.

Give the frequency of use of the following herbs / medicine – daily/ twice in a week/ once in a week/ fortnightly/ monthly/ occasionally/ never.

Black Pepper	Clove	any other
Holy Basil	Aloe Vera	any other
Turmeric	Asophoitida	any other
Goose Berries	Coriander	any other

Garlic	Curry Leaves	Ginger
Onion	Pappya	any other

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Kindly state the herbal medicine or medicinal dishes you are taking/ giving to others for the treatment of following diseases.

1. Dyspepsia ----------
2. Diarrhoea ----------
3. Dysentery ----------
4. Colic pain----------
5. Constipation- ----------
6. Vomiting ----------
7. Intestinal worms----------
8. Jaundice ----------
9. Piles ----------
10. Asthma- ----------
11. Bronchitis ----------
12. Common cold/ cough----------
13. Tuberculosis ----------
14. Rheumatism----------
15. Muscular pain----------
16. Bone fracture----------
17. Mental weakness/ insomnia----------
18. Epilepsy ----------
19. Kidney stone----------
20. Diabetes -
21. Heart problem/ hypertension-----
22. Obesity ----------
23. Anaemia ----------

24. Skin infection----------
25. Gynecological problems- white discharge, contraceptive, delivery problem.----------

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26. Bites and stings- snake, scorpion, honey bee.----------
27. Malaria fever----------
28. Goiter ----------

Do you believe on supernatural power? Yes/ no

Do you believe on religio spiritual power? Yes/ no

Please describe the method of preparation of the herbal dishes you have stated in the schedule.

Please give the posology [dose and form in which medicine is used] of the herbs you are using.

PLATE – A.

HARDE SEED

AJMOD SEED

MAHANIMB- STEM BARK DECOCTION

BEL FRUIT JUICE

BEL FRUIT POWDER

BHUI AMLA

AMALKI FOR COLIC PAIN

PIPPALI

AMOLA IN THE TRIBE-

ERAND OIL

GHRIT KUMARI

BAHEDA CHURNA

HERBS USED IN THE TREATMENT OF GASTROINTESTINAL DISORDERS

PLATE- B.

PALASH FLOWER 50%

BATHUA BHAJI-77%

APAMARG ROOT 92%

SON PATHA- 67%

SOORAN KAND 87%

VAY VIDANG- 88%

ELACHY 99%

GREEN GRASS- 77%

SALPARNI-75%

HERBS USED IN THE TREATMENT OF GASTROINTESTINAL DISORDERS

PLATE –C.

ADULSA DRY LEAVES COLLECTED

KANTAKARI LEAVES

BAMBOOSA PLANT

TULSI

GUNJA

MULETHI

PIPPALI

HAREDE SEEDS

HERBS USED FOR THE TREATMENT OF RESPIRATORY DISORDERS

PLATE D.

GUDMAR LEAVES

BEEJA GLASS FOR DRINKING WATER.

GULAR FRUIT

MEETHI SEEDS

KANCHANAR LEAVES

KARELA JUICE

AMALKI FRUIT

JAMUN FRUIT

HERBS USED IN THE TREATMENT OF DIABETES

PLATE- E.

HERBS USED IN THE TREATMENT OF ANAEMIA

ANAR JUICE

SPROUTED MOONG

AMOLA IN THE TRIBE-

HERBS USED IN THE TREATMENT OF AMAEMIA

Plate F: Researcher with famous Herbalist "Vaidhya Tula Ram Dhruv " (Sankara Nagri)

Plate G: Processing unit of the Herbalist "Bahur Sahu"

Plate H: Research with Jayanti Sahu Herbal User

Plate I: Researcher Filling the Questionnair with Lady Herbalist

Plate J: Photograph of Research with Indepth Group discussion with Lady Herbal Healers

LIST OF PAPER/ ABSTRACT PUBLISHED

S NO.	NAME OF THE ARTICLE	PUBLISHED IN----
1.	*"Ethnomedicinal Practices in Gond Tribes of Nagri Forest Pocket of Dhamtari District, Chhattisgarh India."* *by- Mrs. Shailbals Jais* *Dr. Mrs.Aruna Palta.*	**Research journal of Arts, Management and Social Sciences. Vol 11, Maech 2010 pp424-428.**
2.	*"Medicinal use of viti Cissus quardrangularis In Rurl Chhattisgarh"* *by- Mrs. Shailbals Jais* *Dr. Mrs.Aruna Palta.*	**Rural development in India. By Dr. A. Akhilesh. 2010.**
3.	*"Herbal Remedies Prevalent for the Rheumatoid Arthritis in the Tribes of Chhattisgarh, India: With special reference to Nagri Forest Pocket."* *by- Mrs. Shailbals Jais* *Dr. Mrs.Aruna Palta.*	**Int. Res. J. Lab to Land, vol-1, no.-4 2009 pp293296.**
4.	*"Therapeutic uses of Cynodon dectylon (creeping grass) in rural chhattisgarh".* *by Mrs. Shailbala Jais,* *Dr.Manjulata sood.*	**"Souvenir"National Conference on Frontiers of new biology.org by St. Thomas College, Bhilai, 2010.**
5.	*Prospectives of Herbal and Traditional Medicine"* *by- Mrs. Shailbals Jais* *Dr. Miss Manjulata Sood.*	**"Souvenir", Role of tourisim in the development of economy of C. G. seminar org. by Swami Swarupanane institute of education.2011.**
6.	*"Mycotoxin-Afla Toxin"* *by- Mrs. Shailbals Jais* *Dr. Miss Manjulata Sood.*	**Abstract 47th Annual convention of chemists,2010.**

PAPER PRESENTED- international seminar on ethnomedicine organised by chhattisgarh medicinal plant board, Raipur, C. G. India.

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