

The Folkloric Use of Medicinal Plants in Public Health Care

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ABSTRACT

Medicinal plants is the most affordable, inexpensive and easily accessible source of treatment in the primary healthcare system throughout world. Medicinal plants are used for the treatment of various ailments. The native peoples have a long traditional history of medicinal plants uses for the therapy of different diseases in various regions. Regardless of the growing taking of medicine plants in word, this gorgeous information is not sufficiently recorded. Certification of medicinal plants used as folkloric medicines is desirable the information will conserved and utilized medicinal plants preserved and used sustainably. The main objective of this chapter is to documented material on folkloric uses of medicinal plants in world, recognizing, research breaks and signifying perceptions for the future research work. Medicinal plants are used in folkloric system for the used for the treatment of various disease and disorder such as infection, pain, gastro-intestinal disorders, cold, cough etc. This chapter demonstrates the status of medicinal plants used in folkloric system and management of human diseases and ailments in world. Folkloric usage of medicinal plants play role in simple health care of local communities.

Keywords: Folkloric medicines; Infection; Pain; Gastro-intestinal disorders; Cold; Cough; Compounds; Healthcare

INTRODUCTION

Medicinal plants are a rich source of different classes of bioactive secondary metabolites which are used for sustaining public health or used for treatment of various ailments such as infection, pain etc. Medicinal plants are used throughout the world in an excess of ways in ways in together allopathic and traditional systems [1]. Medicinal plants producing chemical constituents in the maximum effective way with specific selectivity. From the mid of 19th century, many bioactive chemical constituents have been reported from medical plants and numerous of them being used as dynamic constituents of the modern medicine. The examination for effective, cheaper, quality and easily accessible medicinal molecules is one of the drug finding and design research work in the research institutes throughout the world [2].

About 80% of the world population used medicinal plants and plant extracts for their basic health cure. The connection among human, plants and molecules isolated from plants designate the history of mankind. Medicinal plants are the preliminary basis of natural drugs. Medicinal plants are supposed to contain chemical constituents which have potential to use for the treatment of diseases which are not curable in modern medicine. World has countless floras, especially the West and East. During the past era of traditional system of medicine has become a topic of global significance. Currently it has been estimated that throughout the world a great population relies seriously on traditional practitioner for primary health care needs. Herbal drugs have frequently retained popularity for cultural and historic reasons. Presently, numerous people in the advanced countries have initiated to turn to alternate the rapie s, which include medicinal herbs [3]. Ayurvedic system lacks drug standardization, quality control as well as information about medicinal plants. Ayurvedic medicine is a mixture of several ingredients which is prepared from plants extracts but the active compounds isolated from that natural source fail to give the desired activity. In the absence of pharmacological data on the various plants extract and constituents which is not possible to standardize the active molecule having desired biological action. Previous studies showed the toxic effects of chemotherapy and radiation in treatment of cancer by decrees by Ayurvedic medication and wound healing could be done by using Ayurvedic medicine. Modern science play key role in this process, to develop genetically planting materials for desired quality [4].

Naphthoquin ones are a class of bioactive secondary metabolites that are widely distributed in Genus *Diospyros* and have important role as antitumor and anticancer activity [5]. Quinones predominantly 1,4-naphthoquinones are reported for various biological actions such as antimicrobial, anti-inflammatory, antipyretic properties[6]. Quinones possess the capacity to induce oxidative stress, responsible for start of tissue mutilation selectivity in tumor cells and have approach for directing cancer cells [7].

Medicinal plants are used for keeping health and treatment of different ailments. The usage of medicinal plants is in both allopathic and traditional system for the treatment of various diseases

throughout the world. People of the world use allopathic medicine throughout their lives are expected to be fairly medicinal plant needful [8]. Medicinal plant dependence range from people who eat only allopathic medicine system for majority of their health care treatments preliminary treatment. It is not imaginable to roughly estimation the absolute number of peoples, or the numbers of medicinal plants usage at various locations sideways the medicinal plants dependence range. The World Health Organization (**WHO**) estimated that about 80% of the world's population relies on traditional remedies for preliminary health care [9] and there is assumption that more than 2 billion peoples deeply conditional on medicinal plants [10].

Since ancient time, in search for release for their disease, the people looked for drugs in nature. The beginnings of the medicinal plants' use were natural, as is the case with animals [11]. In opinion of the detail that at the time there was not satisfactory evidence both concerning the details for the illnesses and regarding which plant could be utilized as a cure, so all was grounded on experience. During this time, the reasons for the use of precise medicinal plant for treatment of certain diseases were being exposed; thus, the medicinal plants' usage progressively unrestricted the empiric outline and became originated on descriptive facts [12].

Principal medicinal plants of the desert areas in Arabian Peninsula dry plant more active than fresh one and leaves bitter. The medicinal plants is general tonic, digestive, anti-inflammatory, anti-microbial, stimulant, anti-cancer, and pain killer. Medicinal throughout world are well known to be purgative, anthelmintic. Medical plants are used as a folk medicine for the treat of fever, allergy, diabetic, dysentery and stomach problems. Some of the medicinal are inhaled to treat headache and asthma. In world medicinal plants are used to treat rheumatism, skin problems, as well as the leaf infusion are used for pharyngitis, syphilis and body weakness [13,14].

Medicinal plants are one of the most significant gifts of Almighty Allah meanwhile the creation of the whole world, which have been exploited to fulfill the needs of humans and animals. The connection among medicinal plants, life and diseases is very old past as mankind itself. Medicinal plants play a significant role in being of life on the earth. Mainstream of plants are found to use as a food, while others were poisonous or medicinally useful [15]. Human beings throughout world started using medicinal plants from the actual initial of human life on the earth, because these medicinal plants are rich source of bioactive natural compounds which are used human to cure diverse diseases such microbial infection, wounds healing and many other diseases. Medicinal plants are used as a medicine and were first described by the Babylonian 1770 BC civilization. These medicinal plants have been digging out from the Giza pyramids and the specimens of such plants are preserved in the Cairo Museum [16]. Throughout 20th century plants and secondary metabolites helped to double our life span, reduce pain and revolutionized medicine. The influence to the natural product chemistry is the conformational analysis describes by the Derk Berton and used for the structural identification of the complex molecules natural products [17]. Traditionally medicinal plants have more standards in health care purposes as compared to modern drugs; a

huge number of allopathic drugs are prepared from those medicinal plants extracts [18]. Now the people know the difference between drugs and the traditional medicines, various types of medications that are used to treat different the allopathic disorders and diseases are found in medicinal plants. These type of medications are nowadays using as an active compounds in the modern allopathic drugs such as codeine, morphine and digitoxin which are used as an analgesics. People usually prefer herbal products as compared to artificial one because they are highly evolved and specific with no side effects and sway which they give us, also these herbal products indirectly buildup our body and maintain our health stronger. Under developing and developed countries usually prefer traditional medicine to cure different diseases and disorders, or the product that are isolated from medicinal plants [19].

Mostly new, rare, known and novel molecules are isolated and purified from medicinal plants having medicinal valves, all these new, rare, known and novel chemical constituents are the secondary metabolites which are nowadays using as active compounds in the allopathic drugs [20]. About 80% of the world are using medicinal plants and extracts of those plants the needs of health. From the very beginning of human life there is a relationship between the human, plants and the medicine that are derived from medicinal plants. Natural drugs are all extracted from medicinal plants. The plants contains such types of compounds which have the potential to cure a disease which is incapable of being cured, such types of compounds are isolated from medicinal plants and are then used in the modern allopathic drugs [21]. According to a report, pure isolated and pure compounds from medicinal plants and their derivatives are used in quarter of all medicinal prescriptions suggested by doctors even in the developed countries [22].

Primary and secondary metabolites are the two major types of chemical constituents which are produces from medicinal plants used for the treatment of various diseases. Primary metabolites are responsible for growth and other basic needs or building blocks of medicinal plants while secondary metabolites are responsible for defensive purposes which protect the plants against different types of diseases, disorders and pests [23]. These secondary metabolites are responsible for the treatment of various diseases.

Secondary metabolites give medicinal valves to plants which are beneficial to mankind, and it is reported that these metabolites have action on the human physiology. According to medicinal point of view steroids, alkaloids, flavonoids, tannins, terpenes, and phenolic compounds are the important secondary metabolites [24].

For the search of secondary metabolites which having some biological activity the criteria for study is either that plant is traditionally using to cure any disease or disorder or they has some similarity with any medicinal plant that is using as traditional medicine [25]. It is reported that medicinal plants are the rich source of pharmaceutical drugs, keeping in mind the properties of that medicinal plant the drug is obtained and that is a part of western medicine. There are certain compounds which are directly used as a drug when isolated from the crude extract of medicinal

plants. For example from the roots of serpent *Rauvolfia serpentine* reserpine is isolated and used as a drug. Similarly natural alkaloids vincristine and vinblastine are isolated from rosy periwinkle *Catharanthus roseus* to treat Hodgkin's and leukemia diseases. Ephedrine drug is obtained from a shrub called *Ephedra* which is used to treat decongestant. Digitalis species belong to family *Scrophulariaceae* from which Digitalin is extracted which is used for the treatment of irregular heart beat and also to treat the different problems related to cardiac cycle. There are several drugs that are partially synthesized and partially obtained from medicinal plants as natural compounds; the pure and isolated compound is treated with other drugs or inorganic compound to synthesize a new drug which is used to treat different diseases. For example teniposide and etoposide are two drugs that are used to treat skin cancer are partially synthesized from natural product and other organic and inorganic compounds; the natural compound which is used to synthesize teniposide and etoposide is epipodophyllotoxin that is isolated from podophyllum species of family Berberidaceae. The other example of partially synthesized drug is progesterone which is obtained from Dioscorea species of family Dioscoreaceae commonly known as yam and is used to cure oral contraceptive [26].

Pakistan is one of the single places giving to biodiversity on the earth which has different climatic region. Due to that dissimilar and unique climatic zone or region there are a lot of different species of herbs, shrubs and trees are found in different areas. About 6000 different species of herbs, shrubs and trees are reported to be found in Pakistan [27]. These plants possess curer efficiency of almost all of the diseases, but local people who are living in those areas can utilize those plants as medicine because they have knowledge about that specific plants passes from their ancestors and they pass the same knowledge along with new researches and explorations to their new and upcoming generation [28]. Among 6000 dissimilar species of medicinal plants in Pakistan, about 500-600 are reported as medicinal plants, chemical composition and pharmacological activities were studied for the exploration of these medicinal plants. Himabicine is a drug which is obtained from plants and the drug is prototype of an active compound in a drug which is used to treat cardiovascular diseases [29].

In continuation to previous work on medicinal plants which produce a wide range of natural product. Our current chapter deals with the folkloric uses of medicinal plants in public health care.

MATERIAL AND METHODS

This chapter is mainly focused on the documentation of medicinal plants usage for the treatment of various ailments. A large amount of literature is found on the uses of medicinal plants in many disciplines, such as ethnobotany, medicine, etc. Here we have focused on the traditional uses of medicinal plants and importance. This word was originally known as primitive medicine considered by anthropologists in third world countries. After World War II the period was prospered by "laborer" and "folk" medicine, then finally rural medicine [9].

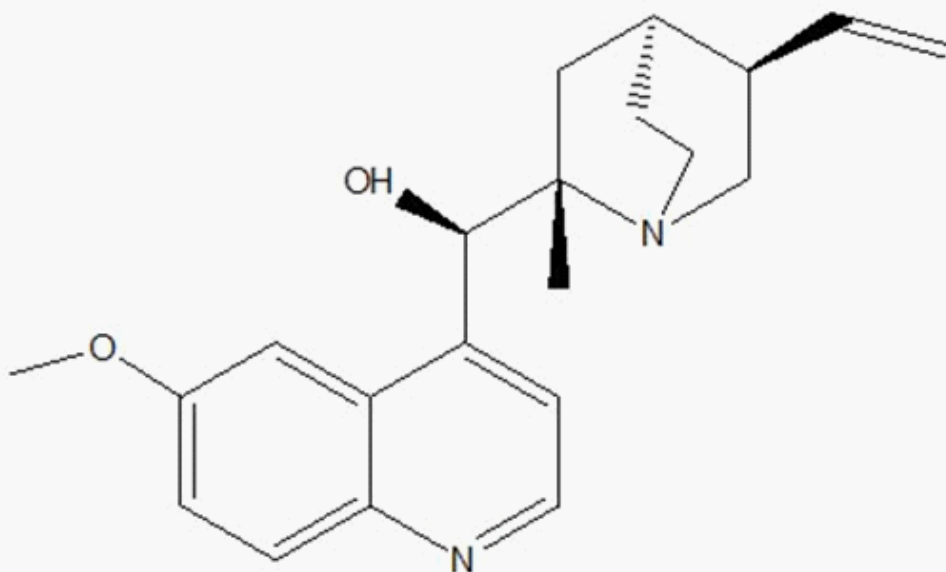
RESULTS AND DISCUSSION

We discuss the folkloric use of medicinal plants and its bioactive secondary metabolites in public health care. This chapter deals with uses of medicinal plants for the treatment of various diseases in different region of the world. Medicinal plants conation various classes of bioactive new, rare, novel and known class of compounds. Plants derived molecules play a key role in treatment of various diseases; such as pain, hepatitis, breast cancer, microbial infection, liver disorder, dysentery, muscle pain and many others. Along with bioactive compounds some plants also contain toxic compounds such as Hydrogen Cyanide (**HCN**) and much other; which case the death of animals within few seconds. Medicinal plants are factory of bioactive compounds which are responsible to cure particle diseases. The extracts isolated from medicinal plants are used to treat different diseases. For example the *n*-hexane extract of a well-known medicinal plant (*Diospyros. variegata*) has been reported for excellent anti-nociceptive properties. The methanol extract of *Diospyros. mespiliformis* is also claimed for the relief of pain which has been tested in acetic acid induced and formalin test pain model which poses significant analgesic potential. Taxarene-3-one isolated from *Diospyros. mespiliformis* has been published as a promising analgesic against acetic acid induced writhing. *D. cordifoliacrude* methanolic extract has been reported for analgesic properties in tail flaking animal model. The crude methanolic extract of *Diospyros. Lotus* has been proved as central and peripheral analgesic. While the *n*-hexane fraction of *Diospyros. variegata* displayed important antipyretic effect in brewer's yeast model while methanolic extract of *D. Mespiliformis* has been reported to possess significant antipyretic effect in tested animals model. Similarly *n*-hexane fraction of *Diospyros. Variegata* a revealed promising anti-inflammatory effect in ethyl phenyl propiolatear achidonic acid induced animal model [30]. Similarly the crude methanolic extract of *Diospyros. mespiliformis* has also reported as a strong anti-inflammatory agent while the crude methanolic extract of the leaves of *Diospyros. cordifolia* also has anti-inflammatory potential against all phlogistic agent used in a dose dependent manner [31]. The hepato protective effect of the crude methanolic extract of *Diospyros. Lotus* against acetaminophen induced liver damage as shown by the reduction of the high level of liver enzymes alanine aminotransferase, aspartate aminotransferase and gamma glutamyl transferase which are raised by acetaminophen. The crude methanol extract of *Diospyros. malabarica* bark has also reported to possess important hepato protective effect in carbon tetrachloride intoxicated rats. In the literature the hepato protective effect of triterpenes have also been documented previously [32].

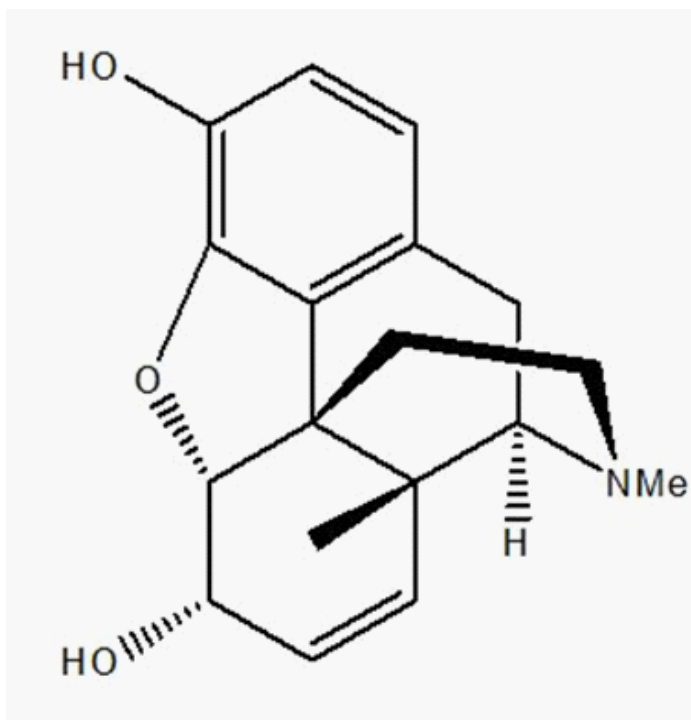
Likewise Methanolic extract of *Diospyros. Lotus* has reported to possess antioxidant effects. Antioxidant action of *Diospyros. Malabaric* a bark extract has been studied for antiradical properties on different *in-vitro* models which exhibited good anti-radical properties in dose-dependent manner in all model except in hydroxyl radical inhibition assay. The petroleum ether and methanolic extracts of *Diospyros. Ebenum* and *Diospyros. Kaki* also showed excellent antioxidant properties [33-38].

Some other example of currently discover drug from medicinal plants is taxol. The history of taxol is too old that how a new medicine from plants species have isolated and analysis. The commercially impractical pacificyew was regularly cast-off as a garbage tree throughout classification of ancient development forests in the Pacific north-west region of the US until it was origin ate to comprise the molecules taxol. Taxol is a compound that kills cancer cells by a mechanism different that of other known chemotherapeutic substances. Taxol prevents cell division by preventing the disassembly of the mitoticspindle [39]. The finding of the compound taxol and unique mechanism of action has led to the syntheses of several taxol derivatives compounds which showed more activity then taxol [39, 40], which show a clue from nature molecule which lead to the discovery of new, rare and novel class of drugs that would have been highly difficult to discover in the synthetic laboratory. Initial clinical trials discovered that taxol was able to encourage remission in cases of ground break in govvari an cancer unresponsive to additional treatments [41], succeeding experience as showed that taxol may be one of the most talented new drugs obtain able for the treatment of breast and ovarian cancer [31]. About 80% of the 3rd world population uses natural products as remedies against ailments (WHO). Almost all medicines have their roots in medicinal plants. In 2013, more than 200 small molecules from natural sources were approved as a drug (FDA; USA).

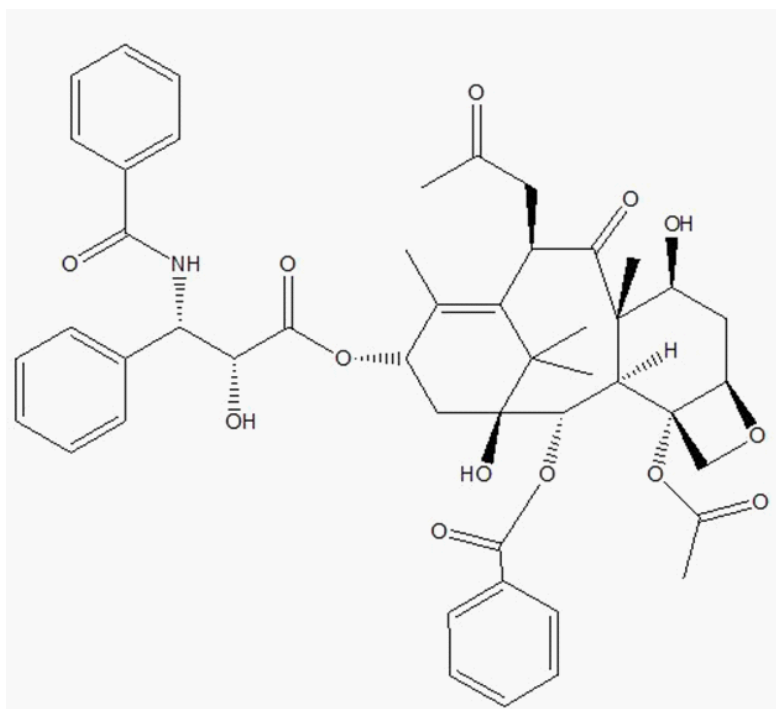
Some the natural products isolated from medicinal plants and its biological potential are listed below.



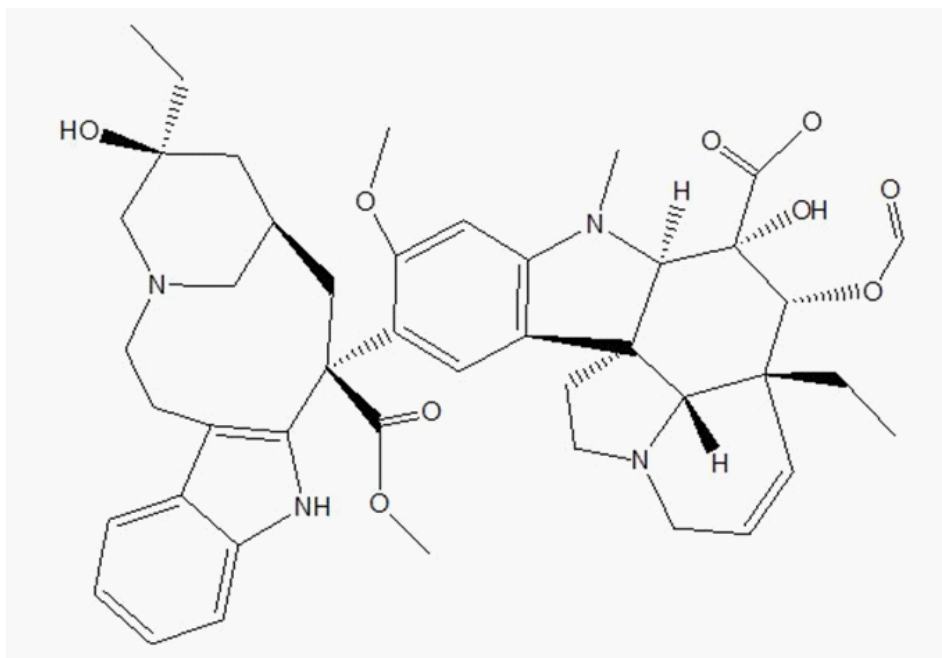
Quinine (Anti-malarial).



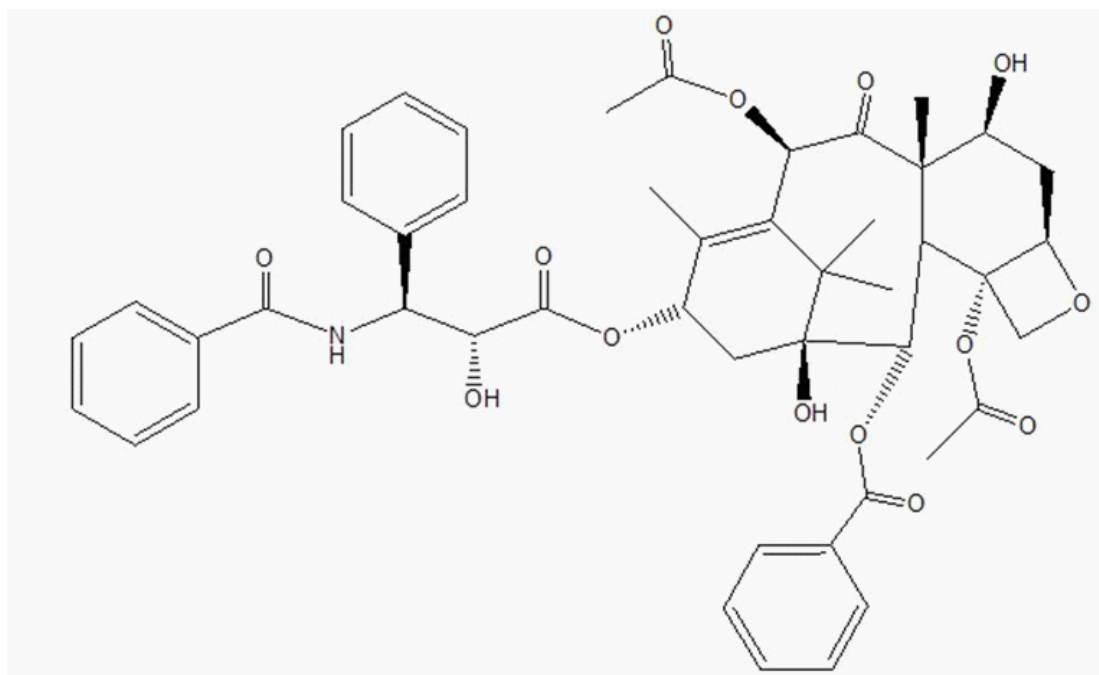
Morphine (Mitotic inhibitor used in cancer chemotherapy).



Taxol (Anti-cancer compound).



Vinblastine (Hodgkins lymphomas and wilms tumor).



Paclitaxel (breast, ovarian, lungs, head and kaposi sarcoma).



Figure 1: Image showing the folkloric use of medicinal plants in public health care.

CONCLUSION

The aim of this current chapter was to document the folkloric uses and importance of medicinal plants and its compounds in public health care. Medical plants are still used throughout world for the preliminary treatment of health, which have no or very little side effects. Medical plants contain bioactive natural product which are responsible for the treatment of various diseases. These plants derived compounds are responsible for the treatment of various diseases of people. This chapter directed the researcher to document the folkloric use of medicinal plants in public health care world wise.

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