

**Date of Acceptance: 01stApr,2024****Date of Publication: 18th Apr, 2024****CURRENT SCENARIO OF HERBAL MEDICINES AND FUTURE PROSPECTUS****Aarti B. Shinde, Vidya M. Danole, Anita V. Waghmode, Y.B. Raut, S.K. Bais****Fabtech College of Pharmacy, Sangola -413307****Corresponding author Mail ID: danolevidya2002@gmail.com****ABSTRACT:**

In the pharmaceutical sector in India has significantly improved the quality of healthcare in both developed and developing nations. By 2020, it is anticipated that India's pharmaceutical market will have grown at a compound annual growth rate of approximately 16%, to reach USD 55 billion. This is attributed to the industry's unique strengths. The development of numerous affordable generic medications has been made possible by Indian pharmaceutical companies since the dawn of civilization, plants have aided all living things, whether they realize it or not. God has given us medicinal plants, which offer the majority of the remedy; even though new diseases are being found on a daily basis. Herbal medicine about domestic and international specifications, there has been a big change in the sector. There should be more initiatives from the government ministries abroad and international student and scholar exchange, as well as internal herbal formulation promotion providing AYUSH education in a college. International regulatory standards must be harmonized in order to ensure flawless transactions involving herbal products between exporting and manufacturing nations.

KEYWORDS: *AYUSH, Herbal medicine, pharmaceutical medicine, Herbal drug discovery***INTRODUCTION**

Herbal Medicinal uses of plants date back much before written history. As early as 3,000 BC, medical applications for plants were documented in papyrus writings from ancient China and Egypt. Herbs were used in healing rituals by indigenous cultures (Native American and African, for example). Ayurvedic, Unani, Siddha, and other traditional medical systems were developed by others. TCM), wherein herbal remedies were applied.[1] Using medications derived from plants and in recent years, the number of other botanicals in the West has multiplied. Two centuries ago, or so, Plant-based medications constituted the majority of our medical practices. But when more reliable synthetic medications became widely accessible, the Western world saw a sharp fall in the medicinal use of herbs. However, many poor nations continued to benefit from the vast body of information around herbal therapy. In addition to Siddha and Ayurveda, other options include Traditional Chinese Medicine (TCM), Indian medicines, Japanese kampo medicine, and the traditional usage of Unani medicine by most populations in the Middle East and South Asia.[2]

Pharmaceutical Medicine

Prescription drugs are one class of freshly created organic chemicals that have enhanced our standard of living. Drug manufacturers create, manufacture, and market pharmaceuticals under both their own brands and their own names. The growing pharmaceutical market and rising pharmaceutical consumption leads to the release

of pharmaceuticals and their metabolites into the environment, particularly water, through deficient management, treatment, and disposal. Pharmaceutical consumption is rising globally, much like the market, as a result of evolving clinical procedures and an increased need for medication to address chronic and age-related illnesses. The four most important pharmaceutical groups are as follows: drugs that decrease blood pressure, lower cholesterol, treat depression, and avoid diabetes. We also stressed the importance of describing global studies dedicated to deleting pharmaceutical groups from water and wastewater, in addition to the pharmaceutical market, drug usage around the globe, and the reasons of death and disease burden.

Pharmaceutical medicine

What is traditional medicine: -

In order to treat, diagnose, and prevent illness, in a recent World Bank report, Madhya Pradesh and Assam, two Indian states, were commended for their commendable efforts to market medicinal plant-related products in a sustainable manner. The fact that India is nearby is extremely concerning. Concerning the patent for formulations, extracts, and other products derived from plants. India has a wealth of medical diversity, but its main export is fairly intensely focused. Market expansion can only occur by suitable cultivation and maturation of therapeutic species, standardization of extracts that meet strict quality standards. According to the Ministry of AYUSH, exports of all AYUSH components and herbal products rose by 27% in 2021 compared to the prior fiscal year. That same fiscal year, however, saw a nearly 28% increase in imports. protects or maintains general health. Modifications to traditional "Complementary" or "Alternative" medicine (CAM) are referred to by this name in developed nations. Since herbal therapy has replaced chemical medication, we can call the current global trend "return to Nature." Medicinal plants have been regarded worldwide since ancient times as a significant source of therapeutic agents that can be utilized to prevent illnesses and disorder. Nature has provided our nation with an abundant supply of India is sometimes called the Medicinal Garden of the World due to its abundance of medicinal plants. According to nations that once had advanced civilizations, including Egypt, China, India, and South America. Are still employing a number of plant-based cures for different ailments. [3]

Reasons for Using Herbal Medicine

Records of people using plants to heal themselves date back to the Neanderthal period. Tenth Reference These days, the number of people seeking herbal medicines is rising. Usually fail to inform their clinicians of concurrent use. Several explanations exist for individuals using herbal remedies. Frequently mentioned is a "feeling of mastery, an emotional solace from acting, "which contributes to the explanation of why many individuals who use herbs suffer from illnesses that are such as diabetes, cancer, AIDS, or arthritis, are chronic or incurable.

Increasing use and popularity: -

Growing acceptance and appeal All developing nations continue to benefit greatly from TM, and industrialized nations are seeing a sharp increase in its use. In China, customary herbal remedies comprise thirty 30% of all prescription drugs consumed. Using medicinal products in the comfort of your own home is the first line of therapy in Zambia, Ghana, Mali, Nigeria, and for 60% of children with high fevers caused by malaria. HOW estimates that customs in a number of African nations How many births are assisted by birth attendants? North America, Europe, and additional More than 50% of people in industrialized areas have used complementary or alternate medicine a minimum of once.

Utilizing entire plants: -

Unpurified plant extracts with multiple constituents are typically utilized by herbalists. It is said that these can cooperate harmoniously to increase the overall effect of the herb. Larger than the sum of its parts' effects.

Additionally, it's said that toxicity is decreased. When whole herbs are utilized in place of discrete active ingredients. Even while the constituent compounds in two samples of a certain herbal remedy may differ in proportion, experts indicate that this generally does not lead to any clinical problems. There is experimental evidence that suggest synergy and buffering in certain whole plant preparations. The level to which this is true for all medicinal substances is uncertain, though.[4]

Consequently, the variety of natural resources that are readily available and their sustainable exploitation through enterprise development and other means are directly responsible for the economic growth of these specific communities. Commercial procurement foreign exchange earnings from the export of industrial and the raw materials are greatly affected by natural plant-based products. recipes, herbal goods, etc. Large demand exists in established world markets for many plants and their processed products, such as opium poppies and tropane. plants like yams, senna, cinchona, etc. that contain alkaloids. Sapogenins an estimated 860 billion worth of herbal raw materials and formulations were exported. Medications to a number of developed nations.

Table No.1: List of Herbal Medicinal Drugs

Medicinal name	Botanical name	Family
Tulsi	Ossicum tenuiflorum	Lamiaceae
Turmaric	Curcuma longa	Zingiberaceae
Cardamom	Elettaria cardamom	Zingiberaceae
Mustard	Brassica juncae	Brassicaceae
Ginger	Zingiber officinale	Zingiberaceae
Black pepper	Piper nigrum	Piperaceae
Garlic	Allium sativum	Amaryllidaceae
Ashwagandha	Withania somnifera	Solanaceae

Assessment

Herbal practitioners use different principles of diagnosis than conventional practitioners. For example, when treating arthritis, they would observe that "the patient's The result of metabolic byproducts is "an increase in symptoms of elimination," which leads to arthritis. A combination of herbs that is choleric, diuretic, or laxative could then be prescribed with herbs that have anti-inflammatory qualities.[5]

Herbal medicines market Growth: -

An annual growth rate of 20% is projected for the ayurvedic pharmaceutical market. India has seen the fastest growth rate in the world in the last 10 years (1987–1996), with sales of medicinal plants rising by almost 25%. That being said, India has some of the lowest annual precipitant expenditures worldwide on medications. Plants are the primary food source in other developing nations. Source for medicinal goods. China and India are two countries that utilize medicinal plants extensively.

Global Scenario of The Indian Herbal Trade: -

The market is expanding gradually and the use of herbal medications is increasing. Approximately Rs. 2,300 crore is the yearly revenue of the Indian herbal medicine sector, compared to properly and traditionally formulated, and about \$1 billion is spent on herbal remedies and homeopathic remedies in traditional medical systems. Roughly 80 million dollars for crude extract, India has a \$1 billion herbal drug market. Following their identity, a selective number of the medicinal plants with the biggest market potential have been collected. The pharmaceutical industry makes a turnover of Rs. 14,500 crores, with a fifteen percent growth rate. A huge quantity of medicinal plants and herbs have been exported from India in recent years. India comes in second

place globally in terms of castor seed production, with an annual production of about 1,25,000 tons. The primary medications that India has recently exported include isabgol, opium alkaloids, Senna derivatives, vinca extract, cinchona alkaloids, and ipecac root. Alkaloids, papian, mehdi leaves, gudmar herb, Solpadine, diosgenine/16DPA, menthol, and Agar wood oil, sandal wood oil, rauwolfia guar gum, jasmine oil, etc. The amount that has changed Indian herbal medications available without a prescription.

The Herbal Industry's Current Situation: -

Most European and non-European nations have adopted herbal medicine as a result of the WHO's traditional medicine strategy from 2002 to 2005 as well as the field's expansion. Concern about security and their own paperwork style. Herbal medication from India the value of the drug market is 50 billion rupees, growing at a rate of 14% yearly. The world's herbal industry might be value close to \$5 trillion by 2050, according to the WHO Financial Summary. Previous herbal markets for Indian goods and raw materials include the EU, USA, Whereas Brazil, Argentina, Mexico, China, and Australia, Canada, Singapore, and Japan Indonesia is a rapidly expanding market with immense potential. As pollution levels rise and global warming intensifies, an increasing number of individuals are turning to herbal medicine and cosmetics globally. Both global and personal simultaneously Further, in response to the population's heavy needs, the producer is becoming more and more interested in marketing and increasing the supply of herbal goods for both developed and developing countries. Research from the EXIM study demonstrates that 880 aromatic and medicinal plants were involved. domestic commerce: About forty-two of these fifty-two medium-sized plants were shipped. The species were imported. The Ministry of Environment and Forests, Government of India Added to that, it is said that over 8000 aromatic and medicinal plants grow in the Ghats of east and west. To preserves general health or fitness. "Complementary" or "alternative" medicine (CAM) refers to changes made to traditional medicine in developed nations. As herbal therapy has replaced synthetic medicine, we could refer to the current global movement as a "Return to Nature." Medicinal plants have been used for thousands of years to treat illnesses and prevent disease. This appreciation and knowledge of them as an indispensable source of therapeutic chemicals is popular. Nature has generously provided our nation with an abundance of medicinal plants from India, recognized as the "Medicinal Garden of the World" due to its abundance on earth.

There are still many plant-based remedies used to treat various illnesses in countries that were previously home to highly developed civilizations, such as Egypt, China, India, and South America. [3] Rajasthan ranks third in terms of exports. The quantity exported is \$55.19 million, which is 61.5% more than the \$34.17 million shipped the year before. The herbal sector is predicted to expand at a 20% yearly pace and have a potential market size of 15000 crores in 2015, according to the Associated Chambers of Commerce and sector of India (ASSOCHAM). Additionally, ASSOCHAM projected that India could earn around \$150 billion from products with value added from herbs if it were to grow and collect about \$300 billion in raw materials. In the drug registry, there are currently approximately 3000 registered formulations and 1000 distinct herbal remedies. None of the more than 25 large-scale Indian producers relate to and follow the standardization effort using a bioactive marker. verify that the plant and plant materials that have been prepared have therapeutic effects. [6]

Herbal Drug Discovery: -

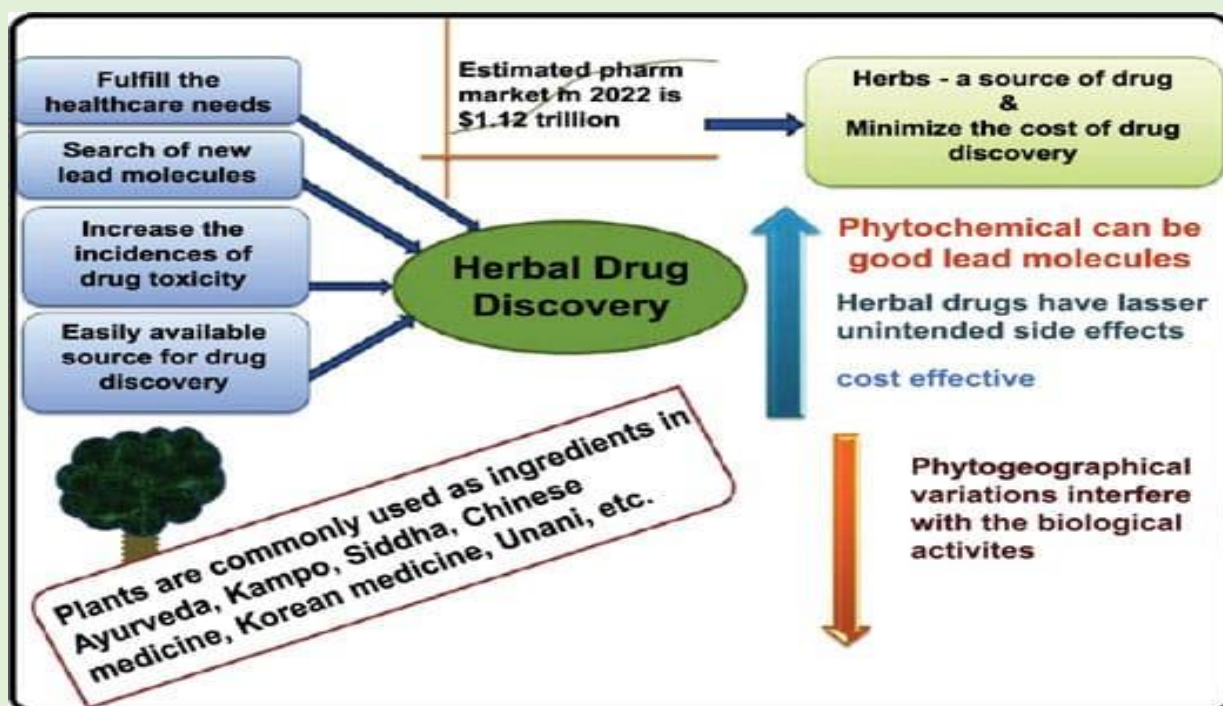


Fig.No.1: Herbal Drug Discovery

This diagram provides a summary of the steps involved in producing a pure drug sourced a plant assembling, classifying, and detecting the plants and In a herb garden, putting a sample voucher. an analysis of previous research on the plant species that were selected for study. First biological testing using solvent extraction and the production of arctic and non-polar extracts. Analyzing a plant extract against a range of biological testing methods, such as receptor binding, enzyme inhibition, and/or cytotoxicity Ascertainments. Fractionation on the extract displaying activity guidance Activity, through observing every chromatographic Portion using the panel's bioassay selected Available for the inquiry. Crystallographic and, if required, chemical methods for the structure elucidation of pure active isolate(s). Examine every active ingredient, regardless of new or recognized chemical structure in every in vivo and in vitro study Available biological testing techniques, in order to Assess the medication's potency and selectivity. Investigations into molecular modeling and the creation of Variations of the active ingredient. Extensive isolation of captivating active Chemicals for pharmaceutical, toxicological, and when complete synthesis is not available for mutation studies Reasonable Phase I–III clinical trials. [7]

Current Status of Herbal Drug:

In a resolution passed by the executive board of the World Health Organization, governments were urged to support the establishment of conventional healthcare systems with more money and to promote the employment of traditional healers in developing countries' medical systems. The board further recommended that the medical community not undervalue the current medical system. WHOM acknowledges that the great majority of the world's underprivileged people have little access to modern medical treatment, and that custom Around the world, delivery attendants deliver two thirds of all newborns. Utilizing both the traditional and Western medical systems will be crucial to meeting the basic health needs of all people on the planet. One of the original objectives of the World Health Organization's (WHO) traditional medicine program was to

promote a practical approach to the subject. The current task is to follow three different avenues for action: Assessment, assimilation, and instruction. Traditionally, It's important in medicine to distinguish between myth and reality, so That legitimate methods and solutions are distinguishable From those that are obviously dangerous or ineffective. The realistic manner in which Nations worldwide, developed and developing Establishing, analyzing their own customs Implies that steps are being taken to achieve this objective. that can Be utilized to assess the efficacy and safety of diverse Components of conventional medical practice. Traditional practitioners need to be trained as well. They require the provision of supplementary competencies. It is imperative that Conventional medicine practitioners' allies as opposed to Rival teams. Traditional birth attendants' education In straightforward prenatal and aseptic delivery methods A good illustration of the postpartum care Opportunities that present themselves for cooperation between the Conventional and contemporary domains of healthcare. During the previous two Years, WHO has undertaken multiple initiatives in the Area of conventional medicine. For instance, among the Activities under the direction of WHO headquarters were the Keeping looking for native plants to increase fertility Control in both genders.[8]

Medicinal System of India:

India is where Ayurveda had the start, back in the pre-Vedic age. Ancient Indian books known as the "Rigveda" and "Atharva-Veda" (written 5000 years B.C.) cover health and illness. The Ayurvedic texts, like the "Sushruta Samhita" and "Charak Samhita," are thought to have been written around the year 1000 BC. "Ayurveda" literally means to "the Science of Life." There is a thorough discussion of steps. For leading an optimally healthy lifestyle during all stages of life. Individuals' physical, mental, social, and spiritual well-being are the focus of positive health concepts and treatment methods. Because of its extensive treatment of both preventive and curative aspects of life, as well as its numerous similarities to the present World Health Organization (WHO) concept of health, Ayurveda is among the oldest medical systems. As a matter of fact, a large percentage of the Atharva Veda's 6599 hymns and 700 prose lines discuss the human body, its illnesses, and possible treatment including magic and prayer. Hobbies. It is said that the "Atharva Veda" is where Ayurveda originated. Poetry descriptions can be read in a multitude of ways, which makes them difficult. In Indian medicine, only natural resources like plants, animals, and minerals are used to treat human problems. Modern medicine developed over fewer than three centuries, mostly from documented discoveries on human anatomy, physiology, and diseases. C.F.S. Hahnemann invented the word "allopathy" in 1842. The application of living materials. Traditional and folk medicine have been beneficial most of the knowledge that has been developed about plants.

Many botanicals have been employed to create potent topical drugs. The most recent instances are guggulsterones found in artemisinin and resin from *Commiphora mukul*. Chinese medicine uses qinghaosu, or *Artemisia annua*. In order to develop modern medicine from Ayurvedic medicine, scientists who studied chemistry, botany, and pharmacology persisted [14, 15]. The psoralens from *Psoralea corylifolia*, the indole alkaloids from *Rauwolfia serpentina* for hypertension, and the alkaloids from *Holarrhena* for amoebiasis are a few examples. An argumentBody tissues and humors in equilibrium provide the definition of a person. With proper digestion and excretory functions, which are all replies to the satisfaction of the sciences of the mind, soul, and body? A diseased condition is one in which this balance is not present. Vatta and Pitta They are called the Tridoshas (Kapha: related to physiological processes) and these three humors.Sickness arises when this equilibrium is thrown off. These three humors are present in a healthy individual and Vital body organs or parts are referred to as dhatus, which is related to the body's structural components. In Ayurveda, diagnosing a patient's condition and determining the cause of their illness are crucial steps in the treatment process. Avoiding the things that are causing the body's equilibrium to shift is the system's method of treatment. And regaining it through medication, a healthy diet, and exercise. Rasayana is a significant Ayurvedic therapy

among other therapies. Rasayan preparations for instance, stimulate the production of hormones and enzymes. The body requires adapting and surviving during illness and times of stress. *Emblica officinalis*, *Acorus calamus*, *Asparagus racemosus*, *Commiphora wightii*, *Sida cordyfolia*, *Tinospora cordyfolia*, *Piper longum*, *Osmium sanctum*, and *Withania somnifera* are a few of the plants used in this therapy. Rasayana therapy focuses on enhancing vigor and strength. The maintenance of freshness, luster, and complexion; optimal strength of the body and senses; enhancement of memory, intelligence, and immunity against disease; and protection of the integrity of the body matrix are only a few of the numerous benefits of this therapy. halting the excessive degradation of body tissues and the functions of Rasayana in enhancing a person's general health functions in therapy. The revitalization and rejuvenation methods were put into practice. in addition to slowing down the aging process, these therapies increased immunity against disease. Rasayanas are suggested for a limited amount of time. Additionally, a strict dietary plan is adhered to. [9]

Global Utilization of Aromatic Medicinal Plants: -

A major producer of raw resources in South Asia is India. Roughly 32,600 tons of crude medicines value US\$ 46 million were exported by the country between 1992 and 1995, according to readily available export data. Concerning business, these Medication made from plants is thought to be worth \$14 billion a year in the United States. Another \$40 billion USD worldwide. Americans contributed an estimated \$21.2 billion. For treatments provided by alternative medicine practitioners. While the USA industry is expanding at a rate of more than 20% per year and is predicted to be worth US\$ 10–12 billion in 2003, the European nutraceutical market is estimated to be around US\$ 9 billion. The number of plant species that have been used historically for medicinal purposes in a particular culture can only be estimated. Should the global number of known medicinal flora be increased by computing this ratio for additional well-known medicinal flora? An estimated 422,000 flowering plant species are known to exist [84,85]. Of those, over 50,000 are utilized medicinally. These medicinal plants are found in different areas and among different flora. [10]

The Medicinal Plants' Supply and Demand:

Medicinal aromatic plants (MAP) are hard to quantify in terms of how many are traded nationally or globally for money. Advanced nations have the largest markets, yet the majority of plant material is exported from underdeveloped ones. Looking at United Nations Conference on Trade and Development trade data from 1981 to 1998, one can see the popularity of this virtually MAP trading.

Traditional Medicine in Healthcare: -

Assembling entries' worth of therapeutic knowledge, traditional medicine is an amalgam. Concerns physicians employed by native medical systems. Herbal medicines are limited to traditional treatments, which primarily employ medicinal plant preparations for therapeutic effects; however, conventional medicine also makes use of aromatic and medicinal plants, minerals, and other organic materials. Conventional medicine has been described as the outcome of combining Indigenous views, ideas, and life experiences from various cultures, whether or not they are applicable, with knowledge, skills, and techniques for the prevention, diagnosis, treatment, and improvement of physical and mental illnesses.

The Pharmaceutical Industries of India: -

India is among the economies with the fastest growth rates; for the fiscal year 2006–2007, current growth is predicted to surpass 8% (9.1% on December 1, 2006). Compound growth is being experienced by the Indian pharmaceutical market. 15% global industry rate of average growth rate (CAGR), as opposed to Eight percent [99] is. McKinney research indicates that the sector will expand at a 19% compound annual growth rate to reach US\$ 25 billion in sales by 2010. India's pharmaceutical industry is expected to witness a significant increase in market capitalization. To US\$ 150 billion from the current range of US\$ 15-20 billion.[11]

The standard of herbal medicines: -

China and India are two developing countries that harvest and prepare a lot of medicinal plants and their extracts. Their substandard quality severely limits the usability of these goods and the integration into other systems. Modern medical practice. Component security and effectiveness can be affected by inadequate quality control standards or by ignoring these rules by utilizing the incorrect technical instruments. For the botanical supplements that are available in North America, *Panax ginseng*, *Panax quinquefolius*, and *Eleutherooccus senticosus*, similar results were obtained. Of these, almost 26% of the goods did not live up to the claims made on the labels. The ginsenoside contents of 232 products range from 0.009 to 8.00%, while the contents of 81 products range from 0.009 to 13.54%. In a different investigation, silymarin was discovered in milk thistle (*Silybum marianum*). 58–116% of the information on the label. After being tested by approved spectrophotometric methods, with 47–165% utilizing HPLC techniques, the hypericin concentration of goods manufactured from St. John's wort (*Hypercom perforatum*) ranged from 22 to 140% of the label claim, according to research. Among the many international organizations and agencies that have lately The European Commission for Pharmacopeia, Research, and Education the Indian System of Medicine is creating new methods to drive and regulate the standardization and quality control of botanical medicine. The words "nutraceutical" is a recent addition to the vocabulary, referring to healthful foods that have been enhanced nutritionally or medicinally.[12]

Justifications for Using Herbal Medicine: -

According to Winslow and Kroll (1998), the first evidence of humans using plants for medicinal purposes dates back to the Neanderthal period. Growing numbers of people are using herbal medicines these days. Quantity of individuals who usually don't visit their doctors' concurrent use. Several Factors that lead patients to use herbal remedies. Often mentioned "A mental comfort that comes from taking action, a sense of control, "Which contributes to the reason that many people who take herbs also Conditions such as diabetes, cancer, and other chronic or terminal illnesses Arthritis or HIV/AIDS. The environment and culture, or the "man earth relationship," are some of the additional cultural elements that support the use of botanicals in rural areas. Individuals think that where a specific disease emerges, that region will also Support plants that have the potential to be therapeutic. A significant proportion of India's rural population lacks knowledge about modern medicine. A hundred and Primary healthcare facilities designed to serve remote areas that lack personnel, facilities for diagnosis, and sufficient supplies of medicines. The rural populace is largely reliant on Customary medical practices. Natural plant-based products are thought to be more healthful than Produced pharmaceuticals.[13]

Regulation of herbal medicine: -

Herbal medicines comprise a concoction of plants that individuals gather and consume for medicinal purposes. Motivations for approving medical goods. Numerous herbal items Fall within the following regulatory range, avoiding the extremes: without a license an estimated 80% or more of the preparations go into Herbal products for sale. Regulations in the European Union mandate that herbal Goods to receive marketing authorization if they are Manufactured in an industrial setting, and if their display or include them in its definition of a function, or both. Medication. Sadly, the illustration of pointed It's challenging to balance the line. The British herbal market has a huge number of medicine-like goods that are currently unregistered for two reasons: (1) There is a significant licensing fee and potentially inaccessible acceptable data regarding efficacy, safety, and quality. Specific licensing requirements for herbal remedies are Already in place in Germany, where assessments of regulations More than 300 years of medicinal herb history have been documented. Books, and more than 200 herbs have been used in France Included on the list of permissible phytomedicine ingredients. [14]

Herbal medicines: A safety concern

There is a wide range in traditional herbal products:

To qualify control, they impose several obstacle the procedures of regulation and quality control. The majority of herbal Items that are currently available on the market have not been Medication approval procedure to substantiate safety and Efficiency. Lead, mercury, and arsenic are present in some of them. Alongside corticosteroids (De Smet, 1997) (Kew et al., 1993). And Dangerous concentrations of organic poisons. Heparin-related After consuming herbal medicine, failure and even death Disclosed (Chattopadhyay, 1996). There are situations when patients use conventional and traditional medicine at the same time. The potential for danger and serious concerns surrounding the in vivo interaction of these two drug types medical scientists are worried about the security of the medical individuals (Chattopadhyay, 1997). Should patients be consuming Traditional medications, herbal remedies ought to be used in tandem with Extreme caution and only in consultation with an experienced herbalist with the appropriate traditional pharmacology. There exist instances Reports of significant negative effects following the administration of Goods made of herbs. Typically, the herbs used were self-Recommended and purchased from a pharmacy or acquired from a non-registered practitioner source.

Reasons to Conduct Clinical Trials: -

In an effort to win over the public and integrate herbal products into the current healthcare system, the researchers, Manufacturers and regulatory bodies need to submit their applications. Strict scientific protocols and clinical trials are used to ensure that the conventional herbal products are of a consistent quality throughout lots. Given that the ultimate products' identities are not Precisely defined, with practically no purification stages Engaged in the manufacturing of herbal goods, the caliber of and a great deal of consistency of the goods primarily depend on the Quality assurance in the procurement of raw materials and their production Become the finished goods.

The Current State of Herbal Medicine: -

According to estimates, 70% of people worldwide use herbal medicine, so its widespread use is not just seen in developing nations. All medical professionals in France and Germany on a regular basis Administer herbal remedies (Murray and Pizzorno, 2000). As The quantity of patients looking to use herbal remedies for treatment is Exponential growth as well A (Et al., Alschuler, 1997) Since the US Food and Drug Administration (FDA) loosened its guidelines for selling herbal supplements, herbal products have become more successful on the market (Gottlieb, 2000). Brevoort (1998) said. The market for herbal medicines among EU members was estimated to be worth \$6. billion (about \$20 billion today) in 1991, primarily supported by Germany, according to published data. France contributed \$1.6 billion, Italy \$0.6 billion, and all together \$3 billion. Strange development has occurred in the field of botanical medicine in the last few decades. Rather than being eradicated by advances in medicine and pharmaceutical chemistry, it has resurfaced. The goal has been advantageous for herbal medicine. Despite being imaginative and sentimental, the medical science analysis Assertions regarding herbal remedies have been rejected, Plant medicine and successful treatments are acknowledged. Additionally, it has been shown that herbal medication possesses a few exceptional qualities. Developed via trial and error and empirical research, many herbal medicines were still remarkably effective (Dwyer and Rattray, 1993). According to a new study by Craig et al. (1997), 39% of all 520 natural goods or newly approved medications between 1983 and 1994 were 60–80% antibacterial and derived from natural sources.[15]

Herbal Medicines Future Prospects:

Currently, scientific studies on therapeutic plants are conducted most vigorously in research facilities, Pharmaceutical labs, academic institutions, and Several industrialized nations' clinics. The majority of this

inquiry is focused in two ways. The active ingredients in plants that are well-known for their research into their potential therapeutic benefits are studied first. The secondary domain of The goal of fundamental research is to find new Types of therapeutic herbs and novel pharmaceuticals from the more Distant places on the planet, which haven't been Thus far investigated. Scientific testing and validation are required for all traditional medicine's medications, including those used in Ayurveda, Unani, and Siddha. The Council for Science and Technology New Delhi's Industrial Research Institute (CSIR) is currently engaged in this field and approximately 350 validations Formulations suited to various tasks. I'm glad to hear that. Trend since it makes an effort to combine customary practice with Current understanding for improved health²⁴. WHO has stressed how important it is to guarantee the Management of plants and plant-based mixtures by means of Current methods. Numerous nations have herbal Create pharmacopoeias and establish monographs to preserve their standard. India's Pharmacopoeia Ayurvedic Gives basic quality parameters recommendations for 80 common Herbal medicines.[16]

Why People Use Herbal Medicine:

According to Winslow and Kroll (1998), there is evidence of human usage of plants as medicine going all the way back to the Neanderthal era. There are an increasing number of people who use herbal remedies. proportion of patients who usually keep information about their concurrent usage from their providers (Miller, 1998) In these conditions, they frequently feel that they have not received adequate care. People frequently resort to home cures for minor illnesses like a sore throat, cold, or bee sting, which frequently go away on their own, according to Winslow and Kroll (1998). This is frequently brought on by the difficulty, expense, or scarcity of getting medical assistance.

The "man-earth relation" and other cultural elements, such as culture, promote the usage of botanicals in rural areas. According to Mudur (1997), a large number of rural Indians lack access to quality healthcare. One hundred primary health facilities geared toward serving remote areas regions that lack enough medical supplies, personnel, and diagnostic equipment. Traditional medicinal methods are largely relied upon by the rural population (Mudur, 1995). Natural plant products are thought to be more healthful than pharmaceutical goods (Gesler, 1992). Furthermore, there are many more reports of harmful effects of conventional drugs in the lay press than there are of toxicities from herbal remedies. This is partly because conventional drugs have systems in place to monitor side effects, In contrast, finding such information for self-treatment is more challenging. Many times, even medical professionals dismiss plants as harmless placebos (Winslow and Kroll).[17]

Bioavailability of Herbal Drugs



Fig.No.2.: Role of Herbal Drug Bioavailability

The herb's active ingredients' bioavailability is still another crucial factor to consider. In before For a drug to have a systemic effect, it must pass through the digestive system and reach the circulation. About the botanical compounds in this area, surprisingly little is known. Oral ingestion of compounds like hydrastine and berberine found in the popular botanical goldenseal (*Hydrastic canadensis* L.) essentially results in their non-absorption. All of the studies that have demonstrated a systemic effect in animals have administered these alkaloids parentally. However, goldenseal remains one of the most widely used herbs, it is widely promoted, and people wrongly think it functions as a broad immunostimulant (Tyler, 1999). However, a study conducted in 1986 by Yeoh et al. on the oral absorption of cinnabar in mice revealed a considerable rise in mercury concentrations in the kidney and liver. Cinnabar's toxicity may be increased by concurrent usage with medications that contain bromides, sulphates, sulphides, nitrates, and iodine.

CONCLUSION:

Over 70% of Indians take herbal medications for their health. There is an abundance of evidence based on experience. However herbal remedies to be effective, quality consciousness regarding the Based on pertinent data, the market for botanical and herbal products is flourishing. Enterprise. Thus, scientists, physicians, and pharmaceutical companies will be considering their options in nations such as China, India, and others. Standards, since they are the top regions with the greatest diversity of medicinal plant species. Suppliers of therapeutic plants. The usage and acceptance of herbal remedies and related goods continue to rise exponentially on a global scale in this scenario. Because of the outdated belief that herbal medicinal products are “safe” because they come from “natural” sources, issues pertaining to adverse reactions are also becoming more visible, more common, and no longer up for debate in recent times. As a result, worldwide standardization and strengthening of regulatory laws pertaining to herbal medications are required. Currently, it is the responsibility of the regulatory bodies to oversee the quality-controlled flow of herbal products and to help them advance to the clinical trial stage.[18]

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