**A REVIEW ARTICLE ON**

**"Phytotherapy: Historical Significance, Present Scenario, Challenges, and Future Prospects of Herbal Medicines"**

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**Abstract**

The science of phytotherapy is not new but has been practised since ancient historical times. This has given an enormous amount of attention to the concept of phytotherapy, especially by the developing and developed states. Among many herbalism rooted in some sort of theory, Ayurveda emphasizes herbs and medicinal plants for treatment. India is the foremost source of written knowledge about herbal plants and their therapeutic uses. Herbal medicines are also called botanical medicines or phytomedicine. According to a survey report released by the World Health Organization, it was found that 80% of the world population relies upon traditional herbal medicine for their primary health care need. In fact, alternative medicine is becoming more and more popular in developed nations and the most sought therapy because they ensure effectiveness, safety, and less side effects. This review paper emphasizes some of the limitations and challenges faced for the production of herbal medicines.

 Keywords: Ayurveda, health, effects, humanity, phytomedicine, traditional.

1. **Introduction**

Herbal medicine, known as phytomedicine, includes ways of utilizing different parts of plants that have medicinal properties. Herbalism has a history of application outside standard medicines. In recent decades, it is entering the arena as other disciplines develop advancements in analysis and quality control along with advances in clinical research[1]. According to WHO definition, phytomedicine or herbal medicine defines the culmination of knowledge, skill, and practices based on theories and experiences native to different cultures, explicable or not, used in the preservation of and restoration to health, as well as in the prevention, diagnosis, improvement, or treatment of physical and mental illnesses[2]. Traditional medicines derived from plants are naturally occurring substances used for the treatment of illness within local or regional healing practices with little or no requirement for industrial processing[3] .Herbal medicines have been commonly used for the benefit of people for thousands of years before the development of the allopathic drug system. Phytomedicine, which originates from crude drugs, includes tinctures, teas, poultices, powders, and other herbal formations.Plants have been used for healing purposes since before recorded human history and thus gave rise to many of modern medicine's origins.Clinical, pharmacological, and chemical studies based on these medicines derived chiefly from the plant kingdom were the only basis of most early medicines: aspirin, from willow bark; digitoxin, from foxglove; morphine, from the opium poppy; quinine, from Cinchona bark; pilocarpine, from jaborandi.Herbal medicines have covered 70-80% of primary health care treatment for developing countries in the world[4]. The high percentage reflects why in developing countries people prefer to resort to herbal systems before going for conventional medicines; that includes inability to buy conventional medicines or lack of knowledge about them[5].

* 1. **Classification**

These classifications that include indigenous herbal medicines, herbal medicines in systems, modified herbal medicines, and imported products with a herbal medicine base set in by the WHO are based on the origin, evolution, and use of the medicine in modern times. Indigenous Herbal Medicines According to the Work Bank (World Health Organization, 1989), indigenous herbal medicines refer to those which were historically or locally used in a specific local community or tribal community and is a predominant form in the healing practices identified with that specific region and well known to the mentioned people because of its long acceptance by the specific population in terms of composition, treatment, and dosage[6]. The medicines should be easily available, accepted, and freely used by the local populace or within that region. Herbal medicines in systems have been used for many years under different theories and concepts, and are accepted by the countries. Modified herbal medicines are result of the changes in shape, form, including dose, dosage form, mode of administration or application, herbal medicinal ingredients, methods of preparation, and medical indications. Imported products with herbal medicine basically cover all imported herbal medicines in both raw and finished forms[7]. Imported herbal medicines must get registered and marketed in the countries of their origin. There are different systems of traditional medicine, with the philosophy of medicine and practices differing under the environments, prevailing conditions, and geographic areas that informed the evolution. Natural products derived from plants have been used by humans alike for food and medicines over the years[8]. Natural product parts or whole plants make inroad toward curing and prevention of diseases. Very difficult to find out when exactly men adopted plants as medicines, some ancient literature here and there have stated on this topic[9].

* 1. **Historical Background**

The original use of medicinal plants comprising drug preparation is some 5000 years old from Sumerian clay evidence found at Nagpur, which had twelve recipes in reference to more than 250 varied plants, so some being alkaloids like the poppy, henbane, and mandrake[10]. These Indian holy books Vedas too make references to treatment with the help of plants, which are very much in abundance in this country. Written by Emperor Shen Nung circa 2500 BC, the Chinese book based on the use of roots and grasses “Pen T’Sao” mentions around 365 drugs, out of which several are still in use. With his books “De Causis Plantarium” - Plant Etiology and “De Historia Plantarium” - Plant History, Theophrastus laid the foundation of botanical science[11]. In these books, he classifies about 500 medicinal plants that existed at his time. While mentioning about the plant toxicity action, Theophrastus underscored the important feature for humans to get accustomed to them by slowly increasing the doses. Each country bears an independent document on the utilization of plants and herbs for treatment and cure of disease; thus sufficient differences lay among them. In India, Ayurveda is the oldest system of medicine, about 5000 years old. The Ayurvedic text is, in actuality, a part of Atharvaveda dating to 1000 BC. In the days of yore, it was transmitted orally, and later on, the first Ayurvedic text was documented and fixed in Sanskrit. Ancient Ayurveda was designed primarily to promote health rather than contending with diseases[12]. Main texts covering herbal medicine are Charak Samhita (1000 BC) and Sushrut Samhita (100 AD).The Ayurveda texts were largely exhaustive, detailing more than 1500 herbs and 10,000 formulations.The Madhav Nidan (800 AD) gave the diagnostic features, concurrent with signs and symptoms of over 5000 diseases or disorders.There are, in general, eight branches of Ayurveda, which are[13]:

• Kaya Chikitsa (general medicine),

• Kaumara Bhruthya (pediatrics),

• Bhutha Vidhya (psychiatry),

• Salakya (Ear-Nose-Throat, ophthalmology and dental surgery),

• Shalya (surgery),

• Agada Tantra (toxicology),

• Rasayana (rejuvenation therapy),

• Vajeekarana (sexual vitality).

Hippocrates, the father of medicines, worked mainly on Anatomies and Physiology of human beings and wrote more than 60 medicinal books. He also propounded a humoral theory that explains that the human body consists of four humor blood, phlegm, yellow bile, and black bile which are mainly responsible for the working of the body in healthy condition and also in diseases. Hippocrates only used herb and is best known for saying; “Let your food be your medicine and let medicine be your food,” “Sickness is caused by body’s inability to digest its environment.” Early 19th century is the turning point in regard to the use and application of medicinal plant. The discovery, substantiation, and isolation of alkaloids from the poppy in 1806 and other plants[11]. Meanwhile, the isolation of glycosides marked the beginning of scientific pharmacy. With the enhancement and upgrading of the chemical methods, other active substances from medicinal plants were also found[13,14].

* 1. **Present Scenario**

The fastest-growing health care products worldwide are herbal medicines or phytomedicines.Most of the people in the world are dependant to some degree, especially in various national health care settings, on herbal products for the alleviation or treatment of various health problems and challenges. The last decades saw an emergence of a popular interest in natural therapies in both developed and developing countries -traditional medicine that is so much wide national scope that there are in its medical jurisdiction. Developing countries may have up to 90% in Africa and 70% in India of their populations relying on traditional practitioners and herbal medicine for primary care[15].The proportions are such that, in China, it accounts for an estimated 40% of the total health care delivered, while more than 90% of general hospitals in the country offer some sort of care through traditional medicine.In current practice, herbs are employed to treat a long list of potential problems and diseases, such as cardiovascular disease, prostate problems, depression, and inflammation, increasing one's immune response, among others.Working in conjunction with this, the Africa flower has, for several decades now, been used as traditional herbal medicine in Africa to help treat HIV-related wasting-syndrome symptoms. It is now estimated that nature has provided nearly 90% of the new drug molecules. Many of the effective drug agents have been derived from nature, for example, dactinomycin, bleomycin, and doxorubicin, vinblastine, irinotecan and paclitaxel (anticancer), mefloquine, chloroquine, amodiaquine, artemisinin, artemether (antimalarial), and metformin and eventually other biguanides, cryptolepine and maprouneacin (anti-diabetic), and calanolide A, curcumin, phenethyl isocyanate, and phenoxidiol (anti-HIV drugs). There are about 25,000 effective plant-based formulations that are used in traditional systems, with over 1.5 million practitioners of the disciplines[11,12,13,14,15]. There are about 7800 herbal drug manufacturing units in India working on about 2000 tonnes of herbs each year. The current evidence suggests that there exists a large market for traditional medicine. The Indian herbal market is worth about 50 billion rupees and yields a swelling annual growth of 14%. The production value of exported herbal products stands at about 1 billion rupees. The demand for medicinal plants is gradually increasing, with WHO prophecies suggesting that the global herbal market will rise to $5 trillion by the year 2050 from its present level then, which is $62 billion. India and China together supply over 70% of the world diversity. Emerging markets are Brazil, Argentina, Mexico, China, and Indonesia, with significant global herbal export markets from the EU, USA, Canada, Australia, Singapore, and Japan[10,11,13].

**1.3.1) Challenges Associated for Phytomedicine**

Some of the Challenges that face phytomedicine. Going further, I think that herbal medicines are often introduced to the market where no mandatory safety or toxicological evaluation is done concerning the effect of the drug, rather, herbs are varied range of pharmaceutical products. Other than that, some of its contestants countries lack good machinery for practicing quality and standard practice in herbal medicine manufacture. Other challenges that are common across several nations include: regulatory status, assessment of safety and efficacy, quality control, use monitoring, and lack of traditional and complementary/alternative medicine knowledge[16].

**1.3.2) Challenges Associated to The Regulatory Status Of Herbal Medicines**

Dietary supplements, by definition, are products taken orally to augment the diet and containing "dietary ingredients." The dietary ingredients found in the products may include diverse vitamins, minerals, herbs, or other botanicals that the body requires. A toxicity study is generally not mandated with regard to intrinsic herbs possibility if such herbs were on the market prior to 1994. For this, the FDA is impelled to bear the burden of proof showing that a certain herbal medicinal product-"dietary ingredient"-is not and is safe for use. Another additional major challenge that arises in many countries is that regulatory information, in relation to herbal medicines, is often not shared between regulatory authorities and safety monitoring or pharmacovigilance centers[17].

**1.3.3) Challenges Associated to The Assessment of Safety and Efficacy**

Everyone could agree that the requirements and the research protocols, standards, and methods needed for the evaluation of safety and efficacy for herbal medicines are much more complex than those for orthodox pharmaceuticals[14]. A single herbal medicine or medicinal plant may contain over a hundred natural constituents, and a mixed herbal medicinal product could have several times more than that. Such an analysis of single active constituents may practically be impossible especially when an herbal product is composed of a mixture of two or more plants[15].

**1.3.4) Challenges Associated to Quality control OF Herbal Medicines**

Production quality of herbal medicines represents an important variable governing safety and efficacy. Quality of source/raw material is dependent not only on intrinsic (genetic) factors, but also on extrinsic factors such as environmental conditions, good agricultural practices, and good collection practices for medicinal plants, including plant selection and cultivation. The myriad factors confounding quality control of raw materials employed in herbal medicine mean such controls are exceedingly difficult to achieve[10]. Correct identification of species of medicinal plants, special storage, and special cleaning methods for various materials, therefore, are important requirements under good manufacturing practices (GMP) for the quality control of starting materials[18]. The big issues, however, are with respect to quality control of finished herbal medicinal products, especially mixed herbal products. Quality control of finished herbal products thus remains many times more complicated than for other pharmaceuticals. The WHO endorses the continued institution of quality assurance and control measures in furtherance of safety and efficacy for herbal medicines-National Quality Specification and standards for herbal materials, GMP, labeling, and licensing schemes for manufacturing[19].

**1.3.5) Future Prospects**

The future is set to face progressively growing demand and theoretical distribution of the herbal medicine market and other healthcare herbal products in developing and developed countries[20].

**Conclusion**

Phytotherapy, the medicinal use of plants, is traditional and modern. This study emphasizes the place of herbal medicine in present-day healthcare around the world. Despite its widespread use of cultures and the growing numbers of users in developed countries, herbal medicine is confronted with serious challenges regarding safety, efficacy, and quality. Complexities related to regulations, varying safety standards across cultures, and difficulties in creating a uniform standard quality highlight the international need for strengthening frameworks and collaboration. With diverse applicability in Ayurveda and other systems, herbal medicine has proven potential in therapy. A long-standing and rich history coupled with modern scientific validation would instigate propositional innovations toward integration with mainstream medicine. Most important, however, is the need to tackle the regulatory, quality, and safety concerns around this issue as the herbal market grows worldwide, so as to ensure its credence and efficacy as far as the future of herbal medicine is concerned. The future of herbal medicine is bright, as awareness about natural therapies and sustainability will keep it up with demand. With adequate facilitation from the World Health Organization and advancements in pharmacological studies, phytotherapy will enter as a safe, effective, and complementary element of health care relevant to the whole of humanity.

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