

REVIEW ARTICLE

Recent Growth of Herbal Drug as Over-The-Counter Products

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Received: 15-12-2022 Revised: 25-01-2023 Accepted: 17-02-2023

ABSTRACT

Herbal medicine has suddenly come into vogue with the notion of and quot; wellness and quot; becoming integral to the health-care business. However, here's the catch. Although India is the birthplace of Ayurveda, one of the most popular forms of herbal medication, the domestic market looks positively anemic when compared with its healthy presence in the West. This review article describes that there are benefits and drawbacks to using herbal medications as over-the-counter (OTC) items. For many mild illnesses, they can be a safe and effective alternative to prescription medications, but the absence of control and standardization can be dangerous for consumer safety. To maintain the safe and efficient use of herbal medications as OTC products, it is crucial to encourage education and knowledge of their right usage.

Keywords: Herbal drugs, Over-the-counter products, Safe and effective

INTRODUCTION

Herbal medicine has suddenly come into vogue with the notion of "wellness" becoming integral to the health-care business. However, here's the catch. Although India is the birthplace of Ayurveda, one of the most popular forms of herbal medication, the domestic market looks positively anemic when compared with its healthy presence in the West. For instance, the use of prescription herbal medication hasn't really taken off in India. In fact, only 30% of the \$1 billion market for herbal medicines is made up of prescription pharmaceuticals, with over 70% being over-the-counter (OTC) items. India is among the top producers of medicinal plants, yet there is a dearth of clinical research, standardization, and regulation in the market.^[1]

According to Durga Prasad of Dabur, "Only those prescription medicines are succeeding that are promoted and supported by standardization and clinical research."

However, he continues, "There is not a lot of data available on a lot of prescription drugs, so this segment is taking a back seat."

However, the OTC market has been expanding consistently. Medicines, including analgesics and cough, cold, and allergy medications, are the key factors driving this development. Even herbal nutritional supplements are quickly gaining acceptance.

According to Philippe Haydon, COO (Pharmaceutical Division), Himalaya Drug Company, "there are many reasons for the growth of the OTC market, including increasing awareness of alternative and complementary medicine and the shift from curative to preventive health care."

With the promotion of the wellness concept, the Indian market for herbal medicines is poised to rise and experience growth of between 12% and

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15% annually. Future medical towns that claim to give patients the choice of receiving herbal and ayurvedic treatments will also contribute to the rise.^[2]

Due to its enormous potential, many pharmaceutical corporations are now entering the herbal health-care industry. Naturally, there is a desire for herbal medicines that have undergone rigorous investigation and validation, according to Haydon. The majority of significant ayurvedic pharmaceutical businesses claim to regularly invest in research and to be expanding. Anil Patel, brand manager for the business, asserts that “Zandu Pharmaceutical Works Limited has seen an upward trend in sales with a y-o-y profit increase of 10–12%.”

Through ayurvedic colleges, direct consumer engagement, and the assistance of famous practitioners, Dabur is also marketing ayurvedic pharmaceuticals.^[3]

For its sales and product promotion, Himalaya, on the other hand, largely relies on doctor’s prescriptions. It was among the first businesses to introduce its exclusive outlets for increased consumer reach on the distribution side.

It is further explained by Haydon that “the outlets are positioned as information kiosks and are an extension of the emerging concept of experimental marketing.” The stores have given the corporation more opportunities for improved customer relationship management in addition to acting as a billboard for the brand.

Therefore, even while innovative marketing and raising awareness may be the solution to India’s sluggish herbal medicine market, the majority of pharmaceutical businesses are not having any issues with their export figures, which are increasing at a rate of 15–18% annually.

Over the past 3 decades, the usage of herbal medicines and supplements has grown significantly, with at least 80% of people turning to them for some aspect of primary health care. Although the efficacy of many herbal products has been proven, therapies utilizing these compounds have shown promising potential. However, many of these drugs remain untested, and their usage is either inadequately or not at all regulated. As a result, it is difficult to advocate the safe and sensible use of

these agents because little information is available about their mode of action, potential adverse responses, contraindications, and interactions with already available orthodox medications and functional foods.

Since safety is still a major concern when using herbal remedies, it is crucial that the proper regulatory agencies put in place the necessary safeguards to protect public health by ensuring that all herbal medications are secure and of high enough quality.^[4]

CURRENT STATUS OF HERBAL DRUGS IN INDIA

The exception of allopathic medicine, all of India’s officially recognized health systems, including Ayurveda, Yoga, Unani, Siddha, Homeopathy, and Naturopathy, heavily relies on herbal remedies. The 1.1 billion people in India still rely on these non-allopathic medical systems. According to the Indian drugs act, there is currently no distinct category for herbal medications or nutritional supplements.

For many natural medications, there is a sizable body of experiential evidence. Reverse pharmacology and observational therapeutics stand to benefit greatly from this. Evidence-based herbals are produced in accordance with pharmacopeial principles and used widely in a variety of systems. Numerous institutes/universities have conducted extensive basic and clinical research using cutting-edge techniques on medicinal plants and their formulations.^[5]

There are a few excellent examples. Antioxidants that are known to stop or postpone many disease states are also abundant in Indian medicinal herbs. Different amounts of antioxidant protection are seen. The therapeutic plants also include other advantageous substances, like components for functional foods.

Therefore, information on the scientific basis of these plants will hopefully contribute to a greater understanding of Ayurveda and Indian herbal remedies worldwide. Rich dividends will result from this in the upcoming years. Ayurveda, Yoga, Unani, Siddha, Homeopathy, and Naturopathy are

some of the legally recognized alternative medical systems that have been practiced in India for a very long time in a safe and continuous manner. These systems have legitimately coexisted with allopathic medicine and are not, as Venkat Subramanian put it, in “the domain of obscurity.”^[6]

Millions of Indians daily use herbal medicines as spices, home remedies, health foods, OTC medications for self-medication, and medications supplied by non-allopathic medical systems.

The more than 500,000 non-allopathic practitioners are licensed by the official councils that oversee professionalism and receive their training in the medical colleges (>400) of their distinct systems of medicine. Therefore, these methods are not based on folklore or customary herbal remedies. These systems’ fundamental premises lead to a logical and systematic framework of etiology and diagnosis, which also determines the course of treatment. In India, herbal pharmaceuticals are governed by the Drug and Cosmetic Act (D and C) 1940 and Rules 1945, which explicitly lays out the regulatory requirements for Ayurveda, Unani, and Siddha medicine^[7] Figure 1.

Any manufacturing or marketing of herbal pharmaceuticals must be done after acquiring a manufacturing license, as appropriate. The department of Ayurveda, Unani, Siddha, and homeopathy (AYUSH) is the regulating authority. The license, formulation composition, manufacture, labeling, packing, quality, and export control are all expanded under the D and C Acts. The good

manufacturing practice (GMP) guidelines that must be followed for the production of herbal medicines are outlined in schedule “T” of the act.^[8]

For the purpose of ensuring that medications meet quality standards, authoritative pharmacopeias and formularies are provided. The D and C Act’s first schedule contains a list of authorized texts that must be followed to license any herbal product falling into any of the two categories:

- ASU medications
- Patented or branded medications.^[9]

For millennia, people have relied on herbal remedies for their security, potency, cultural acceptance, and less adverse effects. Throughout history, people have used plants and plant products to treat and prevent diseases, with varied degrees of effectiveness. In the Indian market, herbal products are becoming more and more popular because of the negative consequences of synthetic items. We talk about scenarios and how people view herbal medicine.

Pharmacopeia of the World states that 91 kinds of plants serve as the source of at least 119 different chemical substances that are major medications used today across 62 therapeutic categories.

The current state of herbal medicine in India is the subject of this essay. As old as humanity, itself are herbal products. As opposed to synthetic ones, herbal preparations have a number of advantages.^[10]

In the Indian market, herbal formulations are becoming more and more popular. Traditional and contemporary pharmaceutical industries both produce nutraceuticals, cosmeceuticals, and biopesticides. This review provides information on the nutraceuticals, cosmeceuticals, and biopesticides that are now popular herbal products on the Indian market.^[11]

Long ago, the advantages of herbal medicines were well known. They have been applied in illness circumstances and for medical and health promotion purposes. It is a common misconception that herbal medications have no adverse effects, are less expensive, and are accessible locally.^[12]

In Indian medical systems, the use of herbs and herbal mixtures is more prevalent. To get the maximum therapeutic benefit and to broaden the market reach, quality monitoring of the marketed



Figure 1: Department of Ayurveda, Yoga and Naturopathy, Unani, Siddha, and Homeopathy

herbs and herbal formulations is crucial. Standards for natural drugs are crucial.

For the purpose of comparing the quality of herbal medications, reference standards—specifically the botanical and phytochemical reference substances from the Indian Pharmacopeia are necessary.^[13]

HERBAL PRODUCTS/DRUGS

Medicines made from plants are known as herbal products. They might be utilized for different therapeutic purposes in addition to being taken as supplements to enhance health and well-being. The various forms of herbal goods include tablets, capsules, powders, extracts, teas, and more.

Thought to be safe since they are natural, herbal medicines can actually have major side effects and combine with other medications and supplements. An herb is a plant or plant component that is utilized for its flavor, aroma, or medicinal qualities. A particular kind of food supplement is an herbal medication. As tablets, capsules, powders, teas, extracts, and fresh or dried plants, they are also sold.

Herbal remedies are used by people to try to preserve or enhance their health. Many people think that anything with the word “natural” in the name is always safe and healthy. This is not always the case Figure 2.

Herbal medications are exempt from the testing that is required for pharmaceuticals. Some herbs, including ephedra and comfrey, can be extremely harmful. Some herbs may interact negatively with OTC or prescription medications.^[14]



Figure 2: Herbal products/drugs

Herbal medicine: A growing field with a long duration

Traditional medicine is defined as “the knowledge, skills, and practices based on the theories, beliefs, and experiences native to various cultures, used in the maintenance of health and the prevention, diagnosis, improvement, or treatment of physical and mental illness.”

Traditional medical practices come in a variety of systems, and each system’s philosophy and practices are influenced by the local culture, environment, and historical context in which they were developed the World Health Organization (WHO, 2005). Despite this, a holistic outlook on life and the harmony of the mind, body, and spirit are common ideologies.

The use of herbs is a crucial component of all traditional medical systems, and the focus is typically on the patient’s general health rather than the specific illness or sickness they are experiencing.^[15]

List of herbal drugs^[16]

- Acai
- Aloe
- Asian ginseng
- Bitter orange
- Butterbur
- Chamomile
- Cinnamon
- Dandelion
- Ephedra
- European mistletoe
- Fenugreek
- Feverfew
- Garlic
- Ginger
- Ginkgo
- Green tea
- Hoodia
- Mugwort
- Noni
- Peppermint oil
- Red clover
- Sage
- Soy
- Tea tree oil.

HERBAL MEDICINE: A REVIEW

The study of pharmacognosy and the application of medicinal plants, which form the basis of conventional medicine, is known as herbal medicine. The safety and effectiveness of plants used in 21st-century herbalism, which typically does not set standards for purity or dosage, are only partially supported by scientific research. Minerals, shells, certain animal parts, as well as fungi and bee secretions, are frequently used in herbal therapy. Phytomedicine or phytotherapy are additional names for herbal medicine.^[17]

There are various herbal products, such as

- Teas
- Liquid extracts
- Tablets and capsules
- Bath salts
- Ointments
- Oils.

Herbal medications fall into one of two categories: prescription or OTC. The Australian Parliament established the working party on natural and nutritional supplements to assess the efficacy, quality, safety, and labeling of herbal products. (Therapeutic Good Act, 1990)^[18]

A particular kind of food supplement is an herbal medication. Tablets, capsules, powders, teas, extracts, and fresh or dried plants are all available for purchase.

Herbal remedies are used by people to try to preserve or enhance their health. Many people think that anything with the word “natural” in the name is always safe and healthy.

The most frequent justifications for choosing traditional medicine are that it is more cost-effective, more in line with the patient’s philosophy, allays worries about the side effects of chemical (synthetic) medicines, satisfies a desire for more individualized health care, and makes health information more widely available to the general public.^[19]

Herbal remedies are primarily used for chronic, as opposed to life-threatening, diseases and for health promotion. However, the use of traditional treatments rises when modern medicine fails to effectively treat an illness, as is the case with advanced cancer and emerging infectious diseases.

Traditional medicines are also widely regarded as being natural, harmless, and non-toxic. This is not always the case, especially since it is highly typical to take herbs along with prescription pharmaceuticals, OTC treatments, or other herbs.^[20] Whether or whether people have physical or financial access to allopathic medicine, traditional medicine is a thriving global commercial industry that offers a crucial health-care service.^[21]

Currently, herbal remedies are used to treat both acute and chronic illnesses, as well as a wide range of disorders, including inflammation, depression, prostate issues, cardiovascular disease, and prostate problems.

At most industrialized nations, one can find essential oils, herbal extracts, or herbal teas being sold at pharmacies alongside conventional drugs. Essential oils, herbal extracts, and herbal teas are also quite popular in Europe, with Germany and France leading the continent in OTC sales.^[22]

HERBAL SUPPLEMENTS

Herbal products, botanical products, or phytomedicines are derived from plants or botanicals and are used to treat illnesses or preserve health. An herbal supplement is a product made from plants that is only intended for internal use.

Numerous prescription treatments and OTC medications are also created from plant materials, but they are Food and Drug Administration (FDA)-regulated and only include purified chemicals. Whole plants or plant components may be found in herbal supplements.^[23]

Herbal supplements are available in a variety of forms, including dried, chopped, powdered, liquid, capsules, and more.

- Swallowed as pills, powders, or tinctures
- Brewed as tea
- Applied to the skin as gels, lotions, or creams
- Added to bath water.

Utilizing herbal supplements has been done for thousands of years. Today, Indian consumers frequently take herbal supplements. They are not suitable for everyone, though. The usage of herbal supplements is still debatable because they are not closely regulated by the FDA or other

governing bodies. It is best to discuss using herbal supplements with your doctor while discussing any symptoms or illnesses you may be experiencing.^[24]

Common herbal supplements and their applications include

There are many herbal supplements with numerous applications. Some of the most typical include the following:

Aloe vera

It is applied topically for osteoarthritis, psoriasis, and burns. It is used orally to treat digestive problems like constipation or gastritis.

Black cohosh black

It is used to treat menopausal symptoms such vaginal dryness, vaginal hot flashes, and night sweats.

Chamomile

It is used to cure gas, diarrhea, upset stomach, nervousness, and lack of sleep. In addition, it is applied topically for skin issues. Use caution if you have ragweed allergies.

Echinacea

To treat cold and flu symptoms.

Flaxseed

Used to decrease cholesterol. Good source of omega-3 fatty acids and fiber.

Ginkgo

Used to cure tinnitus and memory issues (ringing in the ears). It can be combined with SSRIs, an antidepressant, to improve sex desire and sexual function in patients who experience negative side effects from antidepressants. People on blood thinners should use caution.

Peppermint oil

It is used to treat intestinal disorders, nausea, indigestion, and other digestive issues.

Soy

It is used to treat excessive cholesterol, memory issues, and menopausal symptoms. Soy supplements and processed foods like soy hot dogs are to be avoided in favor of organic, whole soy foods.

St. John's Wort

Used to treat insomnia, anxiety, and depressive symptoms. Note: This herb interacts with many different medications. Before beginning this supplement, speak with your health-care physician.

Tea tree oil

Acne, athlete's foot, nail fungus, wounds, infections, lice, oral yeast infection (thrush), cold sores, and dandruff can all be treated topically using tea tree oil. The whole herb, teas, syrup, essential oils, ointments, salves, rubs, capsules, and tablets that include a pulverized or powdered form of a raw herb or its dried extract are just a few of the processed and consumed forms of herbs and plants.^[25]

Alcoholic extracts (tinctures), vinegars (acetic acid extracts), hot water extracts (tisanes), long-term boiled extracts, typically of roots or bark (decoctions), and cold infusions of plants are among the different ways that plants and herbs are extracted (Macerates). The components of an herbal extract or product may differ greatly across batches and producers because there is no standardization in place.^[26]

A wide range of chemicals are abundant in plants. The majority of them are phenols or their oxygen-substituted derivatives, such as tannins, and many of them are secondary metabolites. Numerous of these substances have antioxidant qualities. Ethnobotanicals are significant for pharmacological research and drug development since they can be utilized as starting materials for the manufacture of pharmaceuticals or as models for pharmacologically active substances, as well as when plant elements are used directly as therapeutic agents.

The "traditional" procedures of identifying and preparing herbs need to be replaced with more precise and repeatable techniques in light of the rising popularity of herbal medicine to guarantee the product's quality, safety, and consistency. The regulation of the production and marketing of herbal

supplements and medications needs to be given attention given their market worth, possible toxicity, and growing consumer demand, particularly among the sick and elderly parts of our communities.^[27]

Depending on the location where it is employed, herbal medicine is thought from various angles, but all definitions have the same basic idea: using plants or plant parts to treat illness and promote health and wellness. The term “herbal medicines” refers to substances such as herbs, plant parts, plant materials, herbal preparations, and completed herbal products that include one or more active ingredients. Due to its presumed effectiveness, accessibility, and widespread acceptability, the use of herbal medicine has grown worldwide. For primary health care, almost 80% of the general population, particularly in underdeveloped nations, uses medicinal herbs.^[28]

FUTURE PROSPECT OF HERBAL DRUG INDUSTRY

The global trend has recently shifted from synthetic to herbal treatment, or what we can call a “Return to Nature.” The world has long known and highly regarded medicinal plants as a rich source of therapeutic ingredients.

Due to the abundance of plants in our nation, India is referred to as the “Medicinal Garden of the World.” Ayurveda, Siddha, Unani, Homeopathy, Yoga, and Naturopathy are examples of the medical systems used in India.

The assumption that all-natural goods are safe, non-toxic, have few negative effects, and can be purchased easily is the reason for their appeal.

The market for herbal drugs is currently expanding extremely quickly on a global scale. India has not fared well in the global market for herbal items. Eight thousand medicinal plants exist in India. Twenty-five are produced on a huge basis.^[29]

Scope of the herbal drug industry

Herbal market

According to the Associated Chambers of Commerce and Industry of India, the fastest growing market may reach 14,500 crore by 2012 and exports may reach 9000 crore, with a

compound annual growth rate (CAGR) of 20% and 25%, respectively (Assocham).

According to “Herbal Industry Biz,” India exports more than 3600 crore worth of herbal raw materials and medicines each year. The Indian herbal market is currently estimated to be around 7000 crore.

The government’s unanticipated expansion of its herbal farm was done to boost exports and improve the quality of its pharmaceutical products.

Greater economic growth, which is vital for the advancement of new research. Ayurveda generates \$300 million in annual revenue in India, while Unani generates 27.5 million.^[30]

Things to carefully consider before including herbs into medicine.

- Standardization of herbs
- Procurement from the correct source
- Identify of common adulterants by microscopy
- Quality of the herbal
- Toxicity studies
- Herbal and drug interaction.

World market

- Over the past few years, the worldwide herbal market has experienced steady growth
- The size of the global herbal market is anticipated to reach USD 86.74 billion by 2022, at a CAGR of roughly 6.8% from 2016 to 2022. The industry has been gradually expanding in recent years
- The main element driving this market is the rising need for preventive health-care practices.^[31]

Significance factor

1. Preference of consumer for natural therapy
2. Concern regarding undesirable side effects of modern disease
3. Economic Figure 3.

The size of the global market for herbal medicines, which was estimated at USD 84.5 billion in 2019, is projected to increase at a CAGR of 20.5% over the forecast period.

Indian herbal scenario

India’s domestic herbal industry is represented by 8610 licensed herbal units. In partnership

with ICFRE, Dehradun, NMPB conducted a thorough analysis of the Indian herbal market. It has been anticipated that there will be a combined commercial demand for 5,12,000 MT of herbal raw pharmaceuticals in the 2014–2015 fiscal year. In 2014–2015, an estimated 1,34,500 MT of herbal raw drugs, including extracts, were exported. 1,95,000 MT of domestic herbal industry consumption was predicted for the years 2014–2015. Rural households consume an estimated 1,67,500 MT of herbal raw drugs annually. There are 1178 different species of medicinal plants included in trade practices. Two-hundred and forty-two plant species out of those are used annually in amounts of more than 100 MT.

About 80% of the rural population in India employs herbal remedies or traditional medical practices. The Indian herbal sector is thought to utilize close to 1100 plant species, and it generates more than Rs. 80 billion in annual revenue. AYUSH products are among the medicines of herbal exports, accounting for 3% of all Indian pharmaceutical exports. An estimated Rs. 10 billion worth of raw materials make up 70% of the exports from the herbal business each year.^[32,33]

Herbal production facilities have suddenly increased as a result of the recent growth in the usage of herbal medications. Over Rs. 8800 crore is thought to be the AYUSH industry's expected annual revenue. The domestic market for Indian systems of medicine and homeopathy is estimated to be worth around Rs. 4000 crore, and it consumes 177,000 MT of all botanicals annually, with daily growth.

The manufacturing of Ayurvedic drugs is thought to generate a total annual revenue of about Rs. 3500 crore. In addition to this, there is a rising need for natural medicines, food supplements, cosmetics, and products with medicinal value are all included in both domestic and international markets.^[34]

Manufacturing unit

A complex of numerous manufacturing facilities that use herbal material for various purposes exists. There are 9493 manufacturing facilities in total, 8000 of which are small-scale facilities with annual sales of under \$1 billion.

Dabur, Zandu, Himalaya, Shree Baidyanath, Arya VaidyaShala, Vyas Pharmaceuticals, Hamdard, Patanjali, and others are well-known industrial companies with yearly sales of more than 50 crores. Even though there are fewer industrial facilities with a higher turnover, these facilities nevertheless require around 35% of all the raw materials.^[35]

Exim scenario

For the years 2005–2006, it was predicted that the nation would require about 320 MT of botanical raw medicines annually. The AYUSH sector accounts for about 70% of India's exports, which are thought to be in the neighborhood of Rs. 1000 crore annually and are mostly made up of raw materials. Finished goods, such as herbal extracts, make up the remaining portion Figure 4.

Export

The total quantity of exported medicinal plants including plant extracts was 57880 MT. Psyllium

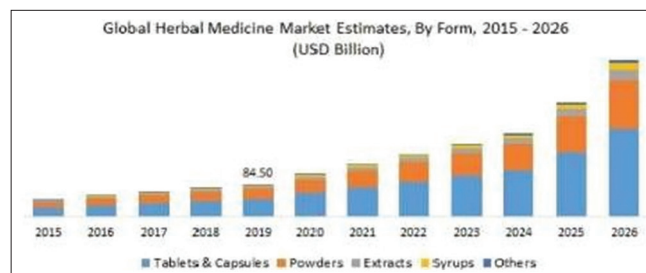


Figure 3: World Market

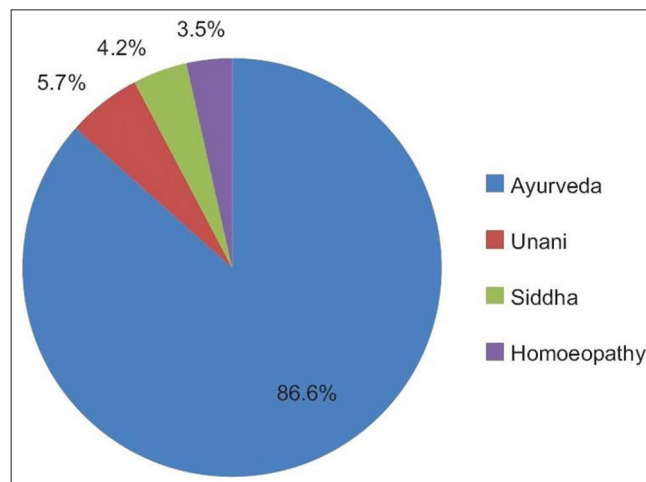


Figure 4: Manufacturing unit

exports constituted 35.6% of total exports of medicinal plants followed by Senna (18.9%).

A total of 56,500 MT worth of plant raw medicines were exported for a total value of Rs. 354.8 crores (excluding extracts).

According to data from the Directorate General of Commercial Intelligence and Statistics, the annual export of India's herbal sector totaled Rs. 807 crores.

This includes exports of plant raw medications worth Rs. 354.80 crores, plant extracts worth Rs. 161 crores, and AUS and H medicines for Rs. 291 crores. It demonstrates that only about 36% of India's overall exports of herbal products are finished goods, with the remaining 64% being raw materials and extracts.

When the export data is compared to the previous year (2007), it reveals a significant increase of Rs. 185 crores, or roughly 30%.^[36]

Import

There were 40 (total) commodities listed for import. The total amount of these imports was 37,483 MT (\$173 crores), with gum arabic accounting for the majority by volume (12,731 MT; 34%).^[37]

Future prospect of herbal medicines

Policy-makers, health-care professionals, and the general public are increasingly voicing concerns about the safety, efficacy, quality, availability, preservation, and future development issues of these herbal products in light of the expanding use and rapidly expanding market of herbal medicines and other herbal health-care products in both developing and developed countries of the world.

Evidence on the quality, safety, and efficacy of herbal items and TM/CAM practices are also in higher demand among the general public. It is imperative to do in-depth research on herbal medicines because of both their enormous medical worth and their potential for commercial success. To prove the usefulness and safety of phytochemical and pharmacological researches, attempts are being made to extract and identify their active chemical constituents.^[38]

Policy-makers, health-care professionals, and even the general public should support the use of herbal medicines because of their important concerns and needs. However, just like with allopathic medicines, the production, sale, and use of herbal medicines should be formally and legally governed by established laws and regulations to guarantee its quality and safety.

The proper application of herbal medications of "assured quality" will undoubtedly have positive therapeutic effects on the users and lessen the hazards involved. In addition, the use of contaminated herbal materials and improper formulation must be prohibited because they might lead to the creation of inferior and potentially deadly herbal medications. As a result, stringent adherence to GMP guidelines is required while producing herbal medications.^[39]

With this warning in mind, it is reasonable to say that herbal medicines have a bright future and could 1 day replace or at least be a better option to synthetic chemical-based allopathic medications.^[40] Herbal treatments have bright future potential. Herbal remedies are becoming more and more popular due to the rising demand for natural products and the growing knowledge of the potential side effects of synthetic drugs. New herbal products are being created that are more efficient and have fewer adverse effects as a result of technological and scientific advancements. The market for herbal medicines is expanding as a result of the global trend toward the use of traditional medicine, which includes herbal remedies. The likelihood of finding new medical plants and their active ingredients is high with increased expenditure in research and development. To assure the safety and effectiveness of herbal products, however, issues such as standardization and quality control must be addressed^[41] Figure 5.

HERBAL BRAND IN INDIA

There are several herbal items that are produced in India and sold there. One of the key drivers of our country's economic development is the Ayurvedic industry. The market is seeing a steady increase in demand for Ayurvedic remedies.

Ayurvedic/herbal companies India

Dabur India limited Dabur Figure 6

Dabur India Limited was set up in 1884, and this brand is considered one of the best herbal range brands in India. The Dabur Chyawanprash is the most popular and demanding Ayurvedic product in the marketplace. This brand offers products for diseases, skincare, and personal care and for other health concerns too.

Patanjali Ayurveda Figure 7

Patanjali Ayurveda is also an ayurvedic company by the popular yoga guru of India Baba Ramdev. This brand is not a newcomer in the ayurvedic segment. Well, it offers an affordable and excellent range of ayurvedic medicine and ayurvedic products in the market.



Figure 5: Global medicine market 2022–2026



Figure 6: Dabur



Figure 7: Patanjali

Furthermore, Patanjali is giving tough competition to the other Ayurvedic brands in the market.^[42]

Baidyanath Figure 8

Shree Baidyanath Ayurved Bhawan Limited was formed in 1917. Moreover, since then Baidyanath has been serving excellent quality Ayurvedic products in the marketplace which are highly reliable. Consequently, they are very popular for preparing the finest remedial formulations made from herbs, and that could help boost better nutrients for a healthy body.

Hamdard laboratories Figure 9

In 1906, the Hamdard Company was established in India. This brand is one of the admired and trusted Ayurvedic companies that offer an excellent range of herbal care medicines for faster healing with Hamdard's ultimate results.



Figure 8: Baidyanath



Figure 9: Hamdard

Furthermore, this company delivers an excellent and wide range of Ayurvedic products in the market to meet people's requirements.^[43]

Zandu Ayurveda Figure 10

Zandu Ayurveda is one ayurvedic brand in the country. Further, this brand offers an excellent remedial solution for diseases and cancer issues. Moreover, in the present, they are one of the richest Ayurvedic brands in India.^[44]

Himalaya welleness Figure 11

Himalaya Wellness offers the finest range of personal care products, hair care products, and natural skincare products in the market. Moreover, D truly they are really effective and best for regular usage. Furthermore, they Dimalaya Offers more than 100 ranges of Ayurvedic remedial solutions for SINCE 1930 curing health issues.^[45]



Figure 10: Zandu Ayurveda



Figure 11: Himalaya

Vicco laboratories Figure 12

Vicco is one of the topmost herbal companies in the Indian market that serves an excellent range of dental and skincare products. Similarly, in the present, they are one of the most developing VICCO and trusted Ayurvedic brands in the herbal care market of India.^[46]

Charak pharma private limited Figure 13

This is one of the major Ayurvedic brands in the Indian market that offers top-quality Ayurvedic products. Furthermore, they are best at selling their high-quality Ayurvedic range in the foreign markets too.

Sandu pharmaceuticals limited Figure 14

Sandu Pharmaceuticals is one of the major Ayurvedic companies in India. They are serving excellent pediatric and women's care products. Thus, this brand assures to deliver the top quality



Figure 12: Vicco



Figure 13: Charak pharma

herbal trusted in Ayurveda range in the market for curing serious diseases.

Shree dhootapapeshwar limites Figure 15

Shree Dhootapapeshwar Limited is a 73 years 10 months old public company incorporated on October 21, 1948 based out of Mumbai, Maharashtra, India.

Pure, certified, safe, and effective medicine manufactured by Dhootapapeshwar are recognized as the benchmark of quality in the Ayurvedic medicine manufacturing sector and among consumers.^[47]

GMP OF ASU DRUGS

To create high-quality formulations for Ayurvedic, Siddha, and Unani medication manufacturing

facilities and ensure their international recognition, the Indian government has made GMP necessary. The production of safe and effective medications may result from the implementation of GMPs in Ayurvedic pharmaceutical plants. The methods used in Ayurvedic pharmaceuticals are also validated by GMP, which also makes it easier for the regulatory authority to work and finally ensures the safety of Ayurvedic, Siddha, and Unani medications.

Schedule T is referred to as the schedule of medications and cosmetic act and rules, which represents excellent manufacturing practice for ASU (Ayurvedic, Siddha, and Unani) medicines along with the amount of space needed for the premises, the requirements for the specifications, the qualifications needed, the suggested machinery and equipment, etc.^[48]



Figure 14: Sandu pharma



Figure 15: Dhootapapeshwar
Brand: Dabur
Product: Honitus Herbal Cough Remedy

RISING AWARENESS TOWARD HERBAL DRUGS

The study “Herbal medicine: A survey of use, awareness, and attitudes among the population in northern Portugal” to determine the population’s use, knowledge, and attitudes toward herbal medicine in Portugal, this study performed a survey. The findings indicated that there is growing awareness of and interest in using herbal medicine, particularly among women and those with higher levels of education.^[49]

The review article “Global Trends in Herbal Medicine” examines the usage and public knowledge of herbal medicine worldwide. The article emphasizes how herbal medicine is becoming increasingly popular and used in many nations worldwide, particularly in Asia, Africa, and South America. The necessity for standardization and regulation of herbal products is one of the difficulties and opportunities related to the use of herbal medicine that is covered in the article.^[50]

Higher costs for locally produced or imported conventional medications, as well as difficulty accessing facilities for seeking care in the West. On the other hand, herbal drugs used in traditional medicine are less expensive and hence more widely available. Rural residents

can easily access them as well. Cultural forces had a significant role in that revival as well. Even when access to western medical facilities is available, traditional medicine is regarded from a cultural standpoint as an efficient and honorable practice. Thanks to recent developments in environmental science, immunology, medicinal botany, and pharmacognosy, researchers now have a fresh understanding of the precise efficacy of many herbal medicines.^[51]

Furthermore, it is now known that the mechanisms through which herbal medications function are not significantly different from those of conventional drugs. This fact makes it possible for herbal treatments to be, in theory, just as effective as traditional ones.

We discovered that the most often mentioned goal for utilizing herbal medicine across all age categories was treating ailments. Overall, there were fewer mentions of illness prevention and health promotion, although these topics were crucial for the elderly. Herbal treatments were either discussed in relation to treating mild-to-moderate illnesses or as a first line of treatment before turning to mainstream medication.^[52]

Participants emphasized the limitations of herbal treatment for serious disorders in this context. The most often cited reasons why herbal therapy was favored as a form of treatment were dissatisfaction with conventional treatment, prior positive experiences, positive elements associated with herbal medicine, as well as family traditions.

Independent reading and family traditions were shown to be just as important as or even more significant information sources than speaking with medical professionals. It was discovered that the three main purposes of using herbal medicine were to treat, which was the most significant purpose, as well as to improve health.

By age group, there were specific differences: Elderly individuals, who highlighted this feature 4 times, felt that promoting health using herbal medication was only important to them.

Emitted from the other group. For middle-aged and elderly individuals, but not for younger ones, it

was particularly crucial to prevent chronic or acute disease with herbal therapy.^[53]

Herbal medicines are a synthesis of traditional practices from various indigenous medical systems and numerous therapeutic experiences from many earlier generations. According to reports, plant-based medications have been used successfully to treat skin conditions, AIDS, cancer, diabetes, jaundice, hypertension, tuberculosis, and many other infectious diseases.

Many plant-based medicines are still used in ancient civilizations such as Egypt, South America, China, and India to cure these illnesses. The WHO estimates that 60% of the world's population uses herbal medicine and that 80% of those in underdeveloped nations rely nearly entirely on it for their basic medical requirements. Numerous therapeutically beneficial medications for the treatment of acute and chronic disorders have been produced by phytochemicals and their chemical analogs. Research is continually being done to find newer therapeutic compounds derived from medicinal plants.^[54]

The global herbal market is estimated to be over \$100 billion and has reasonable development potential. According to the WHO, the commerce in medicinal plants, herbal raw materials, and herbal pharmaceuticals is expanding at a pace of roughly 15% each year. The assumption that all-natural products are secure, affordable, and widely accessible has contributed to the rising acceptance and popularity of herbal therapy.

However, there are certain issues with herbal medicine's pharmacognosy and standardization when compared to conventional medications. In the past 20 years, research activities have increased in both industrialized and developing nations to test and validate herbal medicines using scientific methods.

We therefore made an effort to analyze the current situation of using herbal medicines to treat various diseases and any related pharmacological concerns, taking into account the bigger future prospects for herbal medicines. Future research is needed to turn herbal drugs into contemporary therapeutic agents, and this is addressed.^[55]

WHY PEOPLE USE HERBAL MEDICINES?

Accessibility and affordability

The use of medicinal plants in treating a wide range of illnesses has been documented extensively throughout many cultures, even while these plants' precise chemical compositions and intended uses were unknown. Given that plant medicines have been used for ages, the widespread use of herbal medicine is a result of cultural acceptance. There are between 1:200 and 1:400 herbal medicine practitioners per 100,000 people in nations such as Zambia, Tanzania, and Uganda. However, there are no more than 1:20,000 practitioners of western medicine.^[56,57]

According to a 1991 survey, there are 100 to 1 more sub-Saharan African traditional practitioners than western practitioners. Comparing, the low cost of herbal medication versus expensive western medicine. The rural population in overpopulated nations, like India, has almost no access to modern treatment; as a result, they are forced to rely on herbal medicine for their essential medical requirements.^[58]

An alternative approach to health care

People believe that plants are healthier than traditional synthesized medications. When compared to reports of herbal toxicity, reports of the negative effects of conventional medications have been found to be far more common.^[59]

Additional justifications for using herbal medicine include: (i) a number of assertions regarding the efficacy and safety of plant-based remedies; (ii) improvements in the quality of herbal remedies due to scientific evaluation; (iii) the need to treat symptoms of chronic or terminal illnesses such as HIV/AIDS, malaria, diabetes, and sickle-cell anemia. According to a survey done in the USA, 78% of HIV/AIDS patients utilize some sort of herbal remedy. Western medicine is thought to have let the public down in focusing on major breakthroughs of disease.^[60-62]

THE PROS AND CONS OF HERBAL MEDICATION

Pros: Nature medications are, well, nature

Dr. Roller explains why it may be worthwhile to consider herbal substitutes. He claims that there aren't as many differences between "natural medicine" and "pharmaceuticals" as you may assume. Many different chemicals found in plants have been utilized as medicines for thousands of years. For modern medicine, naturally occurring molecules are a fantastic source of healing, from phenols to antibiotics to novel cancer treatments in development. Worldwide, active compounds derived from plants are used in close to 25% of medications that are prescribed. In reality, 177 cancer treatments have been approved, and 70% of them are based on natural ingredients.^[63]

Cons: Herbal medicines are not FDA approved

It is not always guaranteed that a drug is secure or efficient just because it contains natural ingredients. According to Dr. Roller, "herbal supplements are not FDA approved, which means they have not undergone any safety, efficacy, or human clinical trials." Researching potential advantages or side effects is even more crucial for some health conditions because these natural medicines are not subject to the same scrutiny as FDA-approved medicines.^[64]

While the FDA does mandate that herbal supplements adhere to GMPs that guarantee a certain level of quality, this in no way guarantees that they are safe for use by everyone. Any dietary supplement may have side effects, and when used with other OTC or prescription drugs, these adverse effects may worsen. Make careful to discuss any prescriptions you are taking with your doctor or chemist in addition to the herbal supplement you are thinking about taking.^[65]

EXAMPLES OF SOME HERBAL OTC PRODUCTS^[66,67] FIGURES 16-19

Examples of common herbal health products and supplements HONITUS, SAFI, Kesh king, Leeford.



Figure 16: Examples of herbal over-the-counter products
Brand: Hamdard
Product: Safi natural blood purifier



Figure 17: Examples of herbal over-the-counter product
Brand: Kesh king
Product: Kesh king ayurvedic oil



Figure 18: Examples of herbal over-the-counter product
Brand: Leeford
Product: Leeford green tea (aqua slim green tea)



Figure 19: Examples of herbal over-the-counter products

CONCLUSION

While the FDA does mandate that herbal supplements adhere to GMPs that guarantee a certain level of quality, this in no way guarantees that they are safe for use by everyone. Any dietary supplement may have side effects, and when used with other OTC or prescription drugs, these adverse effects may worsen. Make careful to discuss any prescriptions you are taking with your doctor or chemist in addition to the herbal supplement you are thinking about taking.

The words “safety” and “natural” are not interchangeable, in actuality. As a result, there is a need for worldwide standardization and strengthening of regulatory policies governing herbal medicines. The competent regulatory bodies in various nations worldwide must take the initiative and keep enforcing the necessary safeguards to protect public health by ensuring that any herbal medications allowed for sale are secure and of a high enough standard.

Health-care professionals who administer medications, such as doctors, nurses, and pharmacists, frequently lack knowledge of how using herbal remedies will affect their patients’ health. Many of them lack enough knowledge of these items and their applications.

Since the majority of patients are now almost always taking various prescription or OTC medications, adequate training is now crucial. Despite the fact that orthodox health-care professionals are constantly encouraged to participate and bear a great deal of responsibility for their invaluable contributions to the safety monitoring of pharmaceuticals, it is crucial that all suppliers of herbal medicines have

the necessary authority to participate in the safety monitoring of herbal medicines.^[68]

However, this should be done in coordination with conventional medical practitioners. To make this effective, it would be necessary to foster a climate of trust that would enable proper knowledge sharing regarding the usage and safety of herbal medications. In actuality, training for health-care workers, suppliers of herbal medicines, and customers/patients is essential for preventing possibly major consequences from misusing herbal medications.

There are benefits and drawbacks to using herbal medications as OTC items. For many mild illnesses, they can be a safe and effective alternative to prescription medications, but the absence of control and standardization can be dangerous for consumer safety. To maintain the safe and efficient use of herbal medications as OTC products, it is crucial to encourage education and knowledge of their right usage.^[69]

A proper knowledge foundation pertinent to decision-making about diagnosis and treatment is also of utmost importance. In addition, every health-care professional should demonstrate significant dedication to comprehending the utilization of herbal medications. When they come across patients who are using these meds, they might do this by asking pertinent questions about the use of these herbal remedies among other things. Herbal medications must also be understood by medical professionals who operate in poison control centers and health information services.^[70]

To ensure that herbal medicines meet the necessary criteria for safety, quality, and efficacy, they must now be subject to drug regulatory frameworks in every country on earth, just like other medications for human use.

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