

Review Article

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History, Development, And Risks Associated With Traditional Herbal Treatment

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Introduction

It is of utmost importance that the Traditional System of Medicine should be developed on the principles of the particular system. If, in the name of research and development, we sacrifice the basic principles of indigenous systems, then it is bound to lead to their degeneration rather than development. Huxley rightly stated, "The great tragedy of science – the slaying of a beautiful hypothesis by an ugly fact".

The use of crude drugs and herbs has its own philosophy and plus points. An herb in its natural form, besides its active principle, has also other constituents like resins, gum, sugar, vitamins, inorganic elements, and many vegetable substances. These built-in antidote mechanisms provided by Nature protect the healthy tissues from the ill effects of the drugs so that even the prolonged use of such drugs does not inflict any harm. Thus, the total effect of natural products yields beneficial results as a consequence of the synergistic effect of all the constituents present.

Dr. Half den Mahler of WHO rightly pointed out before that if you have to deal with 30,000 different types of Orthodox drugs in the market in any particular country, it is quite impossible for any doctor to have sufficient knowledge about all these drugs. In his opinion, 95% of the illness could be cured by 100 to 200 drugs. Hence, we in the indigenous system should confine ourselves to a limited number of drugs prepared with genuine and well-identified herbal ingredients with proper determination and display of manufacturing.

Indigenous systems of medicine mostly depend on medicinal plants. There is a threat of extinction for certain species of plants. We have taken this gift of Nature for granted. There is an urgent need to develop herbal farms in order to grow medicinal plants on a mass scale and to supply them same through governmental agencies. We must remember that, unlike animals, plants cannot walk in search of food, nor can they run away from dangerous situations or defend themselves. Their survival on this earth is dependent on seasonal, climatic, and ecological adaptation. Since the development of indigenous systems of medicine is directly related to the development and preservation of medicinal plants, concrete steps should be taken in this direction.

Development is a natural phenomenon. Those who try to gag it, are swept away by its stream. Development in indigenous herbal

drugs has been there, is continuing to be there, and shall be there. It would certainly benefit our system and society only if the process does not snap its umbilical relationship with the roots and goes on nourishing itself utilizing the nectar of Nature.

As the term implies, these approaches to health belong to the traditions of each country and have been handed down from generation to generation. Traditional systems in general have had to meet the needs of the local communities for many centuries.

Traditional medicine comprises those practices that are in existence, often for hundreds of years, before the development and spread of modern scientific medicine are still in use. They vary widely in different countries in keeping with their social and cultural heritage and traditions.

According to one Hadith of Prophet Muhammad (PBH), there is no disease without a cure, it depends on our knowledge. Another Hadith from Prophet Muhammad (PBH), which emphasizes the importance of medicinal plants, is as "Nigella saliva is able to cure every disease except death".

Herbal medicines have been used in traditional medicine for thousands of years and in many countries are still used in mainstream medicine. Herbal medicine, the science or art of plant remedies, has been practiced through the centuries, and probably several thousands of years ago, or let me say since the dawn of time. Primitive humans experimentally sampled many kind of plants in their search for nourishment; plants that produced physiological effects such as perspiration healing or hallucination, were saved for medicinal purposes and divination. The most comprehensive classification of herbal medicines was originally given in John Parkinson's Theatre Botanical published in 1640. Depending on the plant and the treatment, the whole plant or individual parts can be used in the remedy. The earliest written account of herbal remedies comes from China and dates back to 2800 BC.

Here is a brief history of key dates in the development of herbal medicines:

- 2800 BC First written record of herbal medicines, the Pen Tao by Sheen Nun
- 400BC First Greek herbal written; Hippocrates develops principles of diet, exercise and happiness as the cornerstones of health.

- 100BC First illustrated herbal produced in Greece.
- 50AD Roman Empire spread herbal medicine and commerce of plants around the Empire.
- 200AD Herbal practitioner, Galen, creates a system for classifying illnesses and remedies,
- 500 AD Hippocrates' principles were followed in Britain by Middyay practitioners throughout Saxon times.
- 800AD Monks now pioneer herbal medicine with infirmaries and physical gardens at every monastery.
- 1100AD Arab world now a major influence on medicine and healing practices. Physician Avicenna writes the Canon of Medicine.
- 1200AD Black Death spread across Europe; 'qualified' apothecaries try bleeding, purging, mercury, and arsenic to stem the epidemic with no more success than traditional herbalists.
- 1500AD Henry Val promoted herbal medicine in the face of the growing number of untrained apothecaries and other 'medical practitioners' flourishing in London.
- Various Acts of Parliament passed to introduce some regulation of medical practices including protection for 'simple herbalists' to practice without fear of prosecution.
- 1600AD Society sees the first two-tier health system emerge herbs for the poor and exotics (plant, animal or mineral extracts) or 'drugs' for the rich. Nicholas Culpepper writes his famous herbal: The English Physician, explaining in simple terms the practice of herbal medicine.
- 1700AD Preacher Charles Wesley advocates a sensible diet, good hygiene, and herbal medicine as the keys to a healthy life.
- 1800AD Herbal medicines begin to be eclipsed by mineral-drug-based treatments. With powerful drugs such as calomel (mercury) and laudanum available over the counter serious side effects begin to be documented.
- Albert Coffin pioneers low-cost herbal remedies using plants from his native America as well as European ones, helping hundreds of working-class people at his north of England practice.
- Burgeoning pharmaceutical industry makes herbal medicine seem outdated. The National Association of Medical Herbalists founded •to defend the practice. Later it became the National Institute of Medical Herbalists
- 1900AD Medicinal herbals were used extensively during World War I as drugs were in short supply. The post-war period saw enormous expansion in the international pharmaceutical industry and the discovery of penicillin. A handful of dedicated herbalists keep the tradition alive. A Modern Herbal by Hilda Level is published.

Pharmacy & Medicines Act 1941 withdraws herbal practitioner's rights to supply patients with medicines. Public outcry ensures the Act is never enforced. After much campaigning by the NIMH, the Medicines Act in 1968 reinstates practitioners' rights, and the British Herbal Medicine Association is founded. The BHMA produces the British Herbal Pharmacopoeia. The revised edition is published in 1990. Public concern started to grow over the side effects of the 'wonder drugs' of the 1950s and their impact on the environment. 2000AD legislation advocates all. Herbal medicines should be subject to compulsory clinical testing comparable to that undertaken for conventional drugs. Thus all herbal medicines would be licensed. The UK government is currently considering the possible impact and public perception of this legislation.

Greek Philosopher and physician Hippocrates (460-397 BC) freed Medicine from the realm of superstition and magic and gave it the status of science. The theoretical framework of Herbal Medicine is based on the teachings of Hippocrates. After Hippocrates a number of other Greek scholars enriched the system considerably. Of them, Galen (131-210 AD) stands out as one who stabilized its foundation on which Arab Physicians like Razes (850- 925 AD) and Avicenna (980-1037 AD) constructed an imposing edifice.



Hippocrates



Rare manuscript

Herbal Medicine was enriched by imbibing what was best in the contemporary systems of traditional medicine in Egypt, Syria, Iraq, Persia, India, China & and other Middle East & and Far East countries. Over 4000 years ago, according to tradition, the Chinese Emperor Chien Nung put together a book (Herbal) of Medicinal Plants called Pen Tao. It contained descriptions of more than 300 plants, several of which are still used in



Avicenna



Rare manuscript

Medicine. During the same era and later, Sumerians recorded prescriptions on clay tablets, while the Egyptians recorded exotic plant ingredients in Beer Papyrus. The Greeks & and the Romans derived some of their herbal knowledge from these early civilizations.

Their contributions are recorded in De Material Medical by Discords with 950 drugs and the 37-volume Natural History written by Pliny the Elder. According to one Hadith of Prophet Muhammad (PBH), there is no disease without cure, it depends on our knowledge. Another Hadith from Prophet Muhammad (PBH), which emphasizes the importance of medicinal plants, is as "Nigella saliva is able to cure every disease except death".

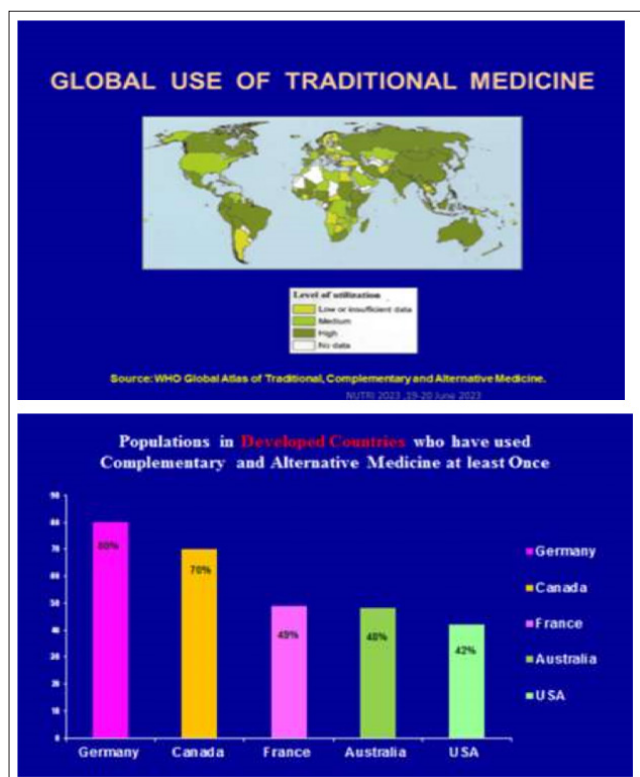
Some of the earlier works are known to us through translations into Arabic by Razes & Avicenna. The Knowledge of Medicinal Plants was further nurtured by monks in Europe, who studied and grew medicinal plants and translated the Arabic work.

The first "Licensed" Apothecary shop opened in Baghdad (Iraq) in 9th century. By the 13th century, London became a major trading centre in Herbs & Spices. Much adulteration occurred in this trade, because proper standards and quality controls had not been established. Poorly identified plants and substitutes for the

true medicinal herbs were sold everywhere.

In 1753 Carolos Linnaeus introduced the binomial system of nomenclature, which helped in the identification of plants. With the subsequent publications of Pharmacopoeias the method of identification and the standard quality for each drug was clearly identified.

In Herbal Medicine, although general preference is for single drugs, compound formulations are also employed in the treatment of various complex and chronic disorders. Since, in this system, stress is laid on the particular temperament of the individual, the medicines administered are such as those which go well with the temperament of the patient, thus accelerating the process of recovery and also eliminating the risk of drug reaction, ever since the incorporation of traditional medicine in its program in 1976, the WHO has gone a long way in creating worldwide interest in the promotion and development of different systems of traditional medicine and their best utilization in health care services. In a survey done by WHO it has been estimated that 80% of more than 4000 million inhabitants of the world rely mainly on traditional medicine for their primary healthcare needs. In developed countries too plant derived drugs are considered important e.g. in the USA 25% of all the prescriptions dispensed from community pharmacies contain plant extract or their active principles, prepared from higher plants.



While relatively novel in the US, Herbal Medicine has a long history in Europe, where for over 100 years their quality control and good manufacturing practices have been comparable to those of conventional drugs. The global market for herbal medications in 1996 was estimated at \$164 billion, distributed in the following manner; Europe; \$7 billion, Japan; 2.4 billion; North America; \$ 1.6 billion; and the rest of the world 0.3 billion.

Economically and technically, Germany has the most developed herbal medicine industry and the single largest market (\$3, 5 billion) Followed by those of France (\$1.8 billion); and Italy (\$0.7 billion). The market is showing double-digit growth and this demonstrates that more people worldwide have accepted the healing powers of Herbal Medicine.

In addition to a role in traditional complementary and alternative medicinal (TCAM) markets, Herbal medicines maintain a role in both over-the-counter and prescription drugs in conventional medicine. An estimated 25% of conventional pharmaceuticals are derived from medicinal plants (Farnsworth 1988). The estimated global market for plant-derived drugs was \$18 billion in 2005 and is expected to grow to \$26 billion by 2011, with the US and Canada accounting for over 50% of the market demand. It was 122 billion dollars in 2022 and expected to be 5 trillion in 2050.



Risks Associated with Herbal and Traditional Medicine

Plants continue to be an important source of discovery and development of novel therapeutic agents [1]. Physicians, pharmacists, scientists, and other professionals should proactively educate consumers and advocate for public health policies that would disseminate evidence-based information regarding the appropriate use of herbs. The awareness of the risks inherent to the use of plants and plant-based products to prevent or cure diseases, or marketed as herbal products not intended to diagnose, treat, cure, or prevent any disease, is a dire need today.

These Risks can be Divided into 4 Categories

- Side effects of medicinal plants
- Side effects and traditional knowledge
- Side effects: Difficulties in attributing them
- Adverse reaction to medicinal plants

In this paper, I will restrict to the fourth point only:

Adverse Reaction to Medicinal Plants

A careful examination of adverse reactions induced by plants and plant-based products shows that the majority of the known cases can be attributed not to the plant itself but to a substitution of the plant by another one, contamination, deliberate or inadvertent, by another plant, by a chemical substance, medicinal or not, by metals, or by microorganisms.

Sometimes, these are plants whose toxicity has long been recognized, yet they continue to be used, often because of a complete lack of consumer information. This information, like quality assurance - identity, purity, safety, which consumers have a right to expect from a product that is supposed to have an effect on health, can be guaranteed only if the products are distributed in an appropriate regulatory framework [2].

Like Conventional Medicines, The Accident Can also be Induced by an Overdose or an Interaction with Other Drugs or Foods

- The plant is toxic, the dose is not respected
- The plant is toxic, the consumer ignores it
- The plant is reputed to be Atoxic
- The plant used is not the one listed on the label
- The plant used is contaminated
- Drugs & food interactions
- The plant is not involved

In case where the plant is toxic, the dose is not respected - in some of the cases the plant itself is toxic and the efficacious dose is exceeded: there is example of Aconite. The analyses of the case reports described in Asia shows that intoxications are associated with the prescribing of the excessive doses by herbalist 10-17 gm, 22 gm, whereas the dose recommended by the Chinese Pharmacopoeia since 1990 is from 1.5 to 3 gm for the prepared root, and 6 gm are enough to evoke substantial toxicity [3-6].

Symptoms: The analyses of the various case reports show that the onset of the first symptoms begins rapidly after injection, 30 to 45 minutes average. The patient feels prickling on the tongue, and tingling of the face and extremities. Nausea and vomiting also begins. Because of the sodium channel stimulating activity of aconitine, the most violent plant toxin, arrhythmia develops. In most serious cases, death occurs by ventricular fibrillation and the fatal outcome cannot be prevented despite external pacing.

This is rather one example where the plant is toxic and the dose is not respected. Similarly the other factors (2-7) must be taken into consideration while dealing with herbal medicine [7,8].

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