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Chapter

Integration of Traditional and Complementary Medicine into Evidence-Based Clinical Practice

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Abstract

Traditional and complementary medicine regains popularity not only in developing countries but also in developed countries. Modern medicine often fails to cure and just tries to alleviate the symptoms. The patient feels better as long as the effect of the drug continues but his/her symptoms reappear after the elimination of the drug. In this way, instead of healing the patients, we turn them into life-time drug dependent. Traditional and complementary medicine, being turned scientifically into evidence-based medicine, will change the medical philosophy and treatment such as individualized and holistic approach. Complementary interventions are used together with conventional treatments, whereas alternative interventions are used instead of conventional medicine.

Keywords: complementary medicine, traditional medicine, alternative medicine, traditional Chinese medicine, homeopathy, ayurveda

1. Introduction

Efforts of human beings to find solutions to the diseases, magic and witchcraft and religious beliefs created the basis of traditional medicine. Currently used drugs are mostly sourced from traditional medical products such aspirin, which has been developed as a painkiller from quinine and cocaine has been prescribed in modern medicine for a long time.

Traditional medicine is living harmonized with cultural components where any disease information is passed through the generations. Not only in developing countries, but also in developed countries, traditional practitioners or physicians using traditional methods continue to give primary health services.

2. WHO (World Health Organization) and traditional and complementary medicine

World Health Organization defined traditional medicine as the skills and practices based on health practices, approaches, knowledge and beliefs from various cultures, whether explicable or not, incorporating plant, animal- and mineral-derived medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination in the maintenance of health and well-being to prevent, diagnose, improve or treat physical and mental illness [1].

The therapeutic outcome is very much related with expectancy, which is created mostly by belief and attitude and results as a placebo, or "meaning response," effect both in modern and traditional medicine.

3. Use of traditional and complementary medicine

From our experience, the most common reasons for using traditional medicine are:

- Economic considerations (it is more affordable).
- The healers know better the sociocultural background of the patients and they are closer to the patient's ideology.
- More concern about the adverse effects of chemical (synthetic) medicines.
- Desire for more personalized health care.
- Greater public access to health information.
- The distances to be covered in some countries.
- The strength of traditional beliefs.
- The shortage of health professionals, particularly in rural areas.
- Low incidence of harmful incidents.
- Perception of traditional and complementary medicine as natural and safe.
- Traditional and complementary medicine is considered natural, safe and non-toxic.

4. Difficulties for the use of traditional and complementary medicine

From our experience, in the use of traditional and complementary medicine, there are problems such as:

- the difficulty in setting the limits
- little knowledge about drug-herbal interactions
- the indeterminant ethical point of view
- the secrecy of healing methods
- the absence of written records
- incorrect diagnosis
- improper dosage
- low hygiene standards

- the lack of a complete code of conduct
- missing scientific and correct instructions, documentation and data base
- insufficient control in labeling and sales
- non-formal structure or organization to train tradi-practitioners
- abuse of traditional medicinal products
- weak labeling
- inefficient control in the market for consumption
- no national nor international convention nor treaty about traditional and complementary medicine

5. Different traditional medicine systems

There are many different systems of traditional medicine, because the philosophy and practices of each are influenced by the prevailing conditions, environment and geographic area [2].

Traditional Chinese medicine (TCM), which is still used in present day health care conserving the holistic approach, is rooted to the ancient philosophy of Taoism and accumulates ancient knowledge dating back more than 2500 years. In this understanding, the human body is considered as a miniature version of the surrounding universe.

TCM encompasses many different practices:

- moxibustion (burning an herb above the skin to apply heat to acupuncture points),
- Chinese herbal medicine,
- tui na (Chinese therapeutic massage),
- dietary therapy and
- acupuncture.

Tai chi: Gentle, dance-like body specific movements or postures, coordinated by breathing, relaxation and mental focus. Tai chi practice improves balance and stability in patients with Parkinson's disease; reduces pain from knee osteoarthritis and fibromyalgia; and increases the quality of life and mood in patients with heart failure.

Harmony between two opposite forces, *yin* and *yang*, maintain the health or imbalance results as a disease. Five elements symbolize all phenomena, and explain the changes in the body functions during any disease. TCM practitioners try to control the yin and yang levels through 12 meridians, to revitalize the (*Q*i), the vital energy, that flows through the body to maintain health [3].

The modalities of CAM vary from culture to culture, and from country to country.

Traditional systems of medicine that exist in other East and South Asian countries, are mostly influenced by TCM and each one has developed distinctive features

of its own. For example, Kampo, the system of traditional herbal medicine in Japan, is even covered by the national health insurance plan and is practiced by many licensed medical doctors.

Ayurveda is practiced in India at the national level within the Federal Health System [4].

In Africa up to 90% and in India 70% of the population use traditional medicine for their health care needs [5].

In the United States, under the Dietary Supplement Health and Education Act (DSHEA) of 1994, any herb, botanical and natural concentrate, metabolite and constituent of extract, is classified as a dietary supplement and no additional toxicity studies are required, if the herb has been on the market prior to 1994 [6].

EU has standardized the information and guidelines related to herbal medicines by producing necessary materials, such as monographs on herbs and preparations, guidelines for the collection of materials of herbal origin, the standardization of applications, the identification and quantitative determination of herbal preparations and their complex compositions [7].

More and more people use the traditional medicines even in developed countries because of the positive perception of patients for the use of herbal medicines and satisfaction with therapeutic outcomes coupled with the disappointment with conventional allopathic or orthodox medicine in terms of effectiveness and/or safety [8].

Since herbal extracts may be contaminated or adulterated, their quality control has a direct impact on their safety and efficacy [9].

To isolate each active ingredient from any herb would be time-consuming at a high cost [10].

6. Medicinal plants as the source for pharmaceutical industry

Plants, herbs and ethnobotanicals are the oldest known health care products and vary depending on the ethnological, medical and historical background of each country. Plants and natural sources form the basis of today's modern medicine and pharmacological industry commercially manufacturing drug preparations for health promotion and treatment of disease. About 25% of the drugs prescribed worldwide are derived from plants.

In July 1996, WHO gathered 100 scientific experts from different countries and they made a list of 28 medicinal plants originally prepared by the WHO Collaborating Centre for Traditional Medicine in Chicago, Illinois, United States of America with 28 monographs.

Over the past 100 years, the development and mass production of chemically synthesized drugs have revolutionized health care. For example, three of the top-selling botanical products, namely *Ginkgo biloba, Allium sativum* (garlic) and *Panax ginseng*, originated from TCM.

Currently, herbs are applied for the treatment of chronic and acute conditions and various ailments and problems such as cardiovascular disease, prostate problems, depression and inflammation. In Africa, for example, a traditional herbal medicine, the Africa flower, has been used for decades to treat wasting symptoms associated with HIV [5].

About 960 plant species are used by the Indian herbal industry [11].

Overall international trade in medicinal plants and their products was US$ 60 billion in 2010 and is expected to reach US$ 5 trillion by 2050.

The pharmaceutical industry has come to consider traditional medicine as a source for identification of bio-active agents that can be used in the preparation of

synthetic medicine. Some of the medicinal plants have been already phyto-chemically screened and characterized and their antimicrobial, anti-inflammatory, anti-oxidant, anticancer and anti-diabetic activities are being tested by biochemists, toxicologists and pharmacologists, in animal models (in vivo), cell lines, pathogen (bacteria, fungi and viruses), parasites (malaria Plasmodium, sleeping sickness (Trypanosome)) and many others. Such clinical research trials have resulted in safety, efficacy and good pharmacokinetics and pharmacodynamics parameters for potential drugs [12].

About 200 years ago, the first pharmacologically active pure compound, morphine, was produced from opium extracted from seeds pods of the poppy *Papaver somniferum* and then the discovery of penicillin [13].

The expanding herbal product market threatens biodiversity due to the overharvesting of plants. Bad collection and cultivation can lead to the extinction of certain plant species and the destruction of natural resources. It is expected that 15,000 of 50,000–70,000 medicinal plant species are threatened with extinction. The herb-herb and herb-drug interactions challenge the identification of the active compounds in the plants and require research-based evidence, increased awareness and study, as polypharmacy and polyherbacy.

The "traditional" ways of identification and preparation of herbs need to be replaced with more accurate and reproducible methods to ensure the quality, safety and consistency of the product. Given the market value, potential toxicity and increasing consumer demand, particularly in the sick and elderly members, regulation of production and marketing of herbal supplements and medicines bring two main areas of concern such as the international diversity and national policies regarding the regulation of the production and use of herbs (and other complementary medicines) and their quality, safety and scientific evidence in relation to health claims.

7. Regulation of traditional medicine products

In many countries, the herbal medicine market is not adequately regulated, herbal medicines and related products are introduced into the market without any mandatory safety or toxicological evaluation and the products are therefore not registered and controlled by regulatory bodies. There is no effective regulation for manufacturing practices and quality standards. The establishment of regulation and registration procedures is still a problem in both developed and developing countries.

Lack of any documentation system for information, conventions, treaties and decree on medicinal plants led to abuse the uses and sale of products without any instruction or any scientific studies on the active principles and safety and poor labeling.

Some herbal products on the market may be of low quality and suspecting efficacy, but sold without prescription and the potential hazards of such an inferior product may not be recognized. Although herbs may also have undesirable side effects, no set "doses" and herb-drug or herb-herb interactions are possible. There is a belief that herbs, as natural products, are inherently safe without side effects and their efficacy can be obtained over a wide range of doses. The general perception is that herbal remedies or drugs are very safe and devoid of adverse effects. But, herbs have been shown to produce undesirable or adverse reactions causing serious injuries, life-threatening conditions and even death.

In many countries, CAM practice is provided outside the national health care systems and practiced by non-regulated personnel. Therefore, it is usually not monitored by the safety mechanisms and reporting systems of the main-stream regulatory and legislative frameworks.

Generally, health professionals are not trained about the use and the effect of herbal medicines [14].

Analysis of adverse events related to the use of herbal products is more complex than the conventional pharmaceuticals. The evaluation of safety is complicated by factors such as the geographical origin of plant material, different processing techniques, route of administration and compatibility with other medicines. Furthermore, there is a lack of knowledge on taxonomic botany and documentation by most manufacturers of herbal medicines during identification and collection of medicinal plants used for herbal remedies.

8. Definition of medicinal plants

There are different ways to define medicinal plants or herbs. As a result, different approaches have been adopted with regard to licensing, dispensing, manufacturing and trading in order to ensure the safety, quality and efficacy of medicinal plant preparations.

By definition, a dietary supplement is a product ingested to supplement the diet. The dietary ingredients in these products may include vitamins, minerals, herbs or other botanicals.

To eliminate the confusion of common names, the mostly used binomial names (including their binomial synonyms) should be accepted for medicinal plants. For example, *Artemisia absinthium* L., which contains an active narcotic derivative, causing CNS disorders and generalized mental deterioration, has at least 11 different common names. Seven of the common names bear no resemblance to its botanical name.

Heliotropium europaeum (heliotrope), which contains potent hepatotoxic pyrrolidine alkaloids, is often confused with *Valeriana officinalis* (garden heliotrope) known to contain valepotriates with sedative and muscle relaxant properties. Therefore, effective monitoring of safety of herbal medicine requires effective collaboration between botanists, phytochemists and pharmacologists [15].

9. Conclusion

In this book, we have planned to bring together a scientific approach to the development of traditional and complementary medicine, the current use especially in Africa where one of the oldest traditional medical use still exists. The theoretical explanation, which combines with energy and information medicine, explains the bio-field approach as an individualized and holistic therapeutic approach. The interrelation with the modern pharmaceutical industry and the conflicts with the modern medicine are emphasized by the oxidative theory which is quite popular in modern medicine to explain the deviation from homeostasis.

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