

## Chapter II

### Literature Reviewed

#### 2.1 The Indigenous Knowledge System

The study of the indigenous knowledge is very important for understanding people's thought and the culture of each ethnic group. It is based on the premise that every human being experimented with a certain basic assumption about what are sometimes termed the "fundamental" of human needs. Among these are concepts of time, space, and person according to days and seasons, on their observation of change in their environment Indigenous knowledge is practical thought, which means the way in which ideas, conceptions, and attitudes are developed by people in order to carry out their everyday activities. It is one of the underlying concepts which people used to understand human experience. Keyes (1998) referred to the different ways people think about "illness" and "healing" that illness is any affliction which is considered problematic which they are easily recognizable as something which yields to common sense. For example, when people have a stomachache they do not treat this as illness; rather, they decide they have eaten too much or eaten something that disagreed with them. They might then eat or drink something at home for self care. This example shows the practical thought that is to be distinguished from theoretical thought or scientific knowledge generated through the application of a theoretical model by means of one or another systematic methodology (Keyes C.F., 1998).

In the pre-historic period, ethnic cultures were continued with the wisdom of knowledge of management of natural resources and health care of mankind. The indigenous knowledge of traditional medicine learned from generation to generation by observation, repeated experiments to accumulated experience and use in a way of life which agreed with cultural, social, economic and environmental factors. That harmony of dynamic processes continues up to the present. Thus, for development to be possible we must think of national knowledge or indigenous knowledge, Otherwise development

may cause deteriorating equilibrium of life and social structure (Wasi, P.,1987, Taoprasert, Y., 1995, Nakashima, H., 1996).

## 2.2. Culture and Health

Culture and health is an integral part of living. The state of one's health in every language are expressions which describe the degree of vitality of an individual as well as the degree of aliveness and uniqueness. They reflected an experience of life in their own style which is maintained, among other things, by appropriate personal health practices and a close, loving and warm relationship within the family. Human relations occur within the various sub-groupings in society such as school, the place of worship, the workplace, their environment, etc.( Taoprasert, Y., and Polioudakis, M. ,1996, Claxton, M.,1996).

The role of the cultural belief system in indigenous healing is mostly based on religion, race, community and natural environment, which affects and often controls human lifestyles, human way of life, and human health, and affects their health psychosomatically because it creates their mental value system in life, deeply rooted in their unconscious mind. In traditional Eastern Culture, mostly in indigenous healing, the insight and wisdom on mind/body interaction has been intuitively understood and common for many years (Otsuka, K., 1996).

Wasi (1996) suggested that herbal medicine is one aspect of culture that is a precious heritage to be explored. It can be seen that the scope and dimension of the culture and health is very broad and inter-related; the value of culture for health is enormous in terms of the value of human dignity and quality of life, environment sustainability and social integration and economic value which are in agreement with the whole of life as holistic ( Wasi, P.1996).

## 2.3 Traditional Medicine

Traditional medicine has been used and has grown out of the accumulation of wisdom and experience of past centuries. It has healed and comforted suffering humanity through the ages. The use of traditional medicine(TM) remains widespread in developing countries.

The increasing acceptance of traditional medicine in recent years is also in studies by World Health Organization (WHO). At least three countries, China, Korea, and Viet Nam, have an integrative approach to traditional medicine and many other countries take an inclusive approach. WHO has collected the global review for the "WHO Traditional Medicine Strategy 2002-2005". Traditional medicine was defined that

*"Traditional medicine as including diverse health practice, approaches, knowledge and beliefs incorporating plant, animal, and/ or mineral based medicines, spiritual therapies, manual techniques and exercise applied singularly or in combination to maintain well-being as well as to treat, diagnose, or prevent illness."*

This strategy was an emphasis on issues of the broad use and appeal which are similarly the resolution of the promotion of the role of traditional medicine in the health care system. As for the expenditure which is available and with traditional medicine gaining in use world wide, public and private expenditure is clearly on the increase. The accounting for use is the available source of health care and the ready accessibility of herbal medicine. Thus, the response to the popularity of traditional medicine is becoming more and more extensive. (World Health Organization, 2002).

Many ethnic groups used traditional medicine and believed in the equilibrium of body, mind, natural and supernatural such as:

- The traditional African approach to healing locates the origins of disease within the social context of the afflicted individual, and according to "Zulu" wisdom,
- Hippocrates, the 5<sup>th</sup> century BC. Greek physician who has been called "the father of modern western medicine", emphasized that nature and spirit is the principles, disease is often the result of environmental forces-diet, climate and occupation,

- In traditional Tibetan medicine, the essence of health is a holistic balance in which the microcosm of the body and the macrocosm of human universe are in harmony with each other. Disease results when this balance is upset.

- The ancient Chinese approach to health grew out of their philosophic understanding of "Yin" and "Yang": which act in the human body (the microcosm). Disease, that is to say physical disharmony, is caused by an imbalance of these two forces in the body, and the goal of Chinese medicine is to bring the "Yin" and "Yang" back into balance with each other, thus restoring the person to good health,

- Ayurvedic is an Indian traditional medicine, in which health is described as An achievement of "Dhatu-samyak", the equilibrium of sustaining and nourishing factors; explained that all things were composed of a combination of four elements which are Earth, Water, Air, and Fire, that individual characteristics of matter depend upon the proportion of each element.

Hippocrates used these indigenous concepts as a fundamental theory of the unity of organism-Life itself. Life was comprised of a reciprocal relationship between organism and environment. The organism grows at the expense of environment, taking from it what is necessary to sustain life and rejecting what is unnecessary, which is the origin of disease. (Thomson, R.,1978, Taopraser, Y., and Polioudakis, M.,1996)

The traditional medicine in the Amazon valley, India, Bangladesh, China, and elsewhere in the world provides amazingly similar lessons in spite of their diverse geography. The traditional systems of medicine like Ayurvedic, Unani and Chinese medicine etc. have always played an important role in the health care of people in their countries and their neighboring countries like Burma, Nepal, Sri-lanka, Thailand etc. These systems are well defined and well developed. Drugs have been tested and proved over centuries to be generally nontoxic, safe and without any side effects. These drugs can easily be prepared at a village level without any sophisticated equipment. Their ingredients are generally cheap and locally available (Mazumder, M.S.,1995).

Traditional medicine in Thailand appeared in every period of recorded Thai history from the ancient Khom Empire, Sukhothai, and Ayuthaya. Mulholland(1987)

reviewed the history of Thai text on medicine and found that there is a common belief in Thailand that medicine was brought to Thailand with Buddhism 700 to 1000 years ago (Mulholland J., 1987). Thus, Thai traditional medicine is derived perhaps from Chinese, Indian and Tibetan systems which believe in the balancing of elements in bodies, environment and astronomy.

In the past, Thai traditional medicine was very important: they had a hospital called "A-Lo- Ka-Ya-Sa-La"(อโรคยศาลา) and had a text book of Thai drugs called " Tam-Ra-O-Sod-Pra-Na-Rai"(ตำราโอสถพระนารายณ์). Unfortunately, after two attacks from Burma, Thai traditional healers, text, and Bible were probably destroyed. During the Ratanakosin period, King Rama I ordered the renovation of Wat Po(วัดโพธิ์) in Bangkok and gave instructions for inscription of herbal drugs recipes onto the wall of the temple. During the reigns of King Rama II and King Rama III the renovation was continued and the inscriptions included the diagnosis as well as the cure for each ailment. After that, Western medicine came to Thailand and played the main role in the health system. However, traditional medicine achieved slow development from 1957; there was established the school of traditional medicine at Wat Po in Bangkok and there were branches in major provincial town. In 1986, Professors Dr. Ouy Ketusingh(ศาสตราจารย์ นายแพทย์ อวย เกตุสิงห์) established the foundation for the restoration and promotion of Thai traditional medicine and established the Ayurveda College in 1989 (Subcharoen, P., 1995).

During this period the government started to promote the potential of traditional medicine and medicinal plants as suggested by the WHO Conference in Alma Ata in 1978, and integrated traditional medicine in the 4<sup>th</sup> National Economic and Social Development Plan, and continued it in the 5<sup>th</sup> to the 8<sup>th</sup>. Traditional medicine and medicinal plants were promoted, researched and developed for use in the community, health care system and sustainable economy (Onchomchant, T.,1998).

In fact, the traditional medicine system in Thailand is separated into two systems. One is Thai traditional medicine; this knowledge was a royal systemic practice recorded and accepted by law. The other is folk medicine, the traditional

medicine in rural areas which uses indigenous knowledge with variations according to their culture, environment and belief, but they have not been legally accepted. At present, the National Health Care Reform has tried to press for the acceptance and upgrading and integration of traditional healers or folk medicine into the Thai medical system which have four systems. They are modern medicine, Thai traditional medicine, folk medicine, and alternative medicine. Now, the Ministry of Public Health established the Department of Thai Traditional Medicine and Alternative Medicine for management and development.

The role of traditional medicine in Thailand still exists because of its role of treatment and because it is the leader of mind and spirit for will power in community. Onchomchant (1993) studied the effectiveness of "Lanna" healers in primary health care in Chiang Rai Province and found that the effective roles of traditional healers were as members of the community. They were joined together and helped each other, treat the condition of local problems and psychotherapy using the indigenous concept of their culture and social dimensions. Modern medicine could not play its role in the context of their cultural circumstances. Although modern medicine was the main system, people still used traditional medicine for local disease which could not be explained by modern science such as the local disease in Northern Thailand, "Lom-Pid-Duan" (ลมปิดเดือน; The symptoms of postpartum) or "Pong" (โป่ง; The symptoms of bone pain with or without edema or inflammation). The author submitted that the evaluation of the effectiveness of traditional medicine could not be used in the framework of modern medicine which evaluated only physical effects which were explained by pharmacological effects. Researchers have to evaluate the benefit in social and cultural dimensions too (Onchomchant, T., 1993).

#### **2.4 Traditional Health Care Practice in "Lanna" Culture**

"Lanna" people believed in their religion and continued their culture which was transferred from generation to generation about the relationship of humans, nature and the supernatural, especially the indigenous knowledge of traditional health care which

explains definition of sickness, knowledge about its ethiology, disease process (causes and disease etiology), and treatment process (Taoprasert, Y., 2001). These explanations pointed to the relation of human and human, human and nature, and human and the supernatural. Therefore, the way of health care of "Lanna" people is related to other systems in society such as democracy, economy, education, religion, culture, and family which were holistically connected to every level of the individual, family, kinship and community.

When someone had problems of health or sickness, it meant everybody in the family had a sickness too. Even though it was an individual problem, "Lanna" people believed that it was necessary to look after and help each other to solve the problem. They tried to do self care. If it did not get better they asked advice of their older kin who had more experience in order to decide how to cure or solve their health problems.

The indigenous knowledge of traditional health care practice or knowledge of "Lanna" healers was accumulated in the way of life over a long time. "Lanna" people were familiar with or knew traditional health care very well and could care for themselves at the individual level. If the health problems were more difficult to diagnose by themselves, they will go to consult or solve their problems; If they had problem about anxiety or bad luck they would go to the healer who would conduct a ritual; If they had a physical problem such as muscle pain or joint pain they would go to the masseur or healer who treat with magic and herbs, and if they had problem about illness or disease they will go to the herbalist. For most of them, the important thing which they have to do was to look after themselves regarding foods and behavior.

Hence, it was not necessary for the patient to decide or select the treatment method by himself, it automatically kept one of process in the way of life. This was very helpful for the patients to release their tension. They especially believed that sickness was some part of "Karma"(กรรม), which may be a relationship within the human such as the body and mind (element and spirit), or between element and element, or the external relation between human and human, or human and community, or human and nature or

the supernatural. The relationship and equilibrium of human, nature and the supernatural, are explained as follows:

Humans were born with "Karma" including both good and bad "Karma" from a previous life and from their parents. "Karma" in the past and in the new life are joined together and can not be separated from nature and the supernatural. It will be the indicator of human activity and if they do bad things they will unhappy.

The beginning of life started with two parts of "Kaie" (body or physical aspect) and "Jitt" (mind) which "Lanna" healers explained that:

"Kaie" (กาย; Body or physical aspect) is the human component with five "Dhatus"(elements), with all of "Dhatus"(ธาตุ) being related together in equilibrium. If some "Dhatus" are out of order, it may be less or more than normal, the others will be out of order too. The five Dhatus were as follows:

1. "Dhatus Din" (ธาตุดิน; Earth element) is the element of system and organs of the body such as hair, nails, teeth, skin, muscle, tendons, bone, cartilage, liver, kidneys, large colon, small intestine, heart, lungs, spleen, stomach, fascia, old food(in colon) and new food(in stomach).
2. "Dhatus Namm" (ธาตุน้ำ; Water element) it is the element of the body fluids such as blood, tears, fat, urine, sweat, bile, saliva, lymph, pus and mucus.
3. "Dhatus Lom" (ธาตุลม; Wind element) it is the element of movement. For example Lom is the cause of body movement, blood circulation, stomach and colon movement, the air in body and Lom is the breathing.
4. "Dhatus Fie" (ธาตุไฟ; Fire element) is the element of the body energy such as: Fie is the cause of warmth, anger, digestion, growing up, and Fie is the cause of life or death.
5. "Dhatus Pra Chao" (ธาตุพระเจ้า; Air element) is the element of cavity or space in the body such as nasal cavity, breast cavity, abdomen cavity.

"Jitt" (จิต; Mind) is the human component that shows feeling and thinking which is related to nature and environment. There were 2 parts of Jitt (Mind) as follows:

1. "Jitt Derm" (จิตเดิม; Old spirit) is the spirit which was born when it



started at the moment of conception between sperm and egg. This spirit was brought by the precious life of itself and the Karma of its parents.

2. "Khwan" (ขวัญ; vital energy) is the energy of Dhatus (elements) when fertilization add to "Jitt derm" (Old spirit). "Khwan" is in every part of the body and can leave from the body if the body is weakened by illness or excitement.

Depending on the indigenous knowledge, and belief in "Karma", "Lanna" people could separate the causes of sickness. There were 2 kinds of causes of sickness: one is caused by behavior or "Karma", the other is from disorder of the body or there are "Pha-Yard (พยายาด; diseases) which may or may not be related to nature or the supernatural. If sickness is caused by behavior they go to ritual healers to improve their bad behavior or bad "Karma". If sickness is caused by disorder of body or by "Pha-Yard, they go to herbalists or to healers who use physical therapy such as a bone healer, a masseur, etc. However, whether caused by behavior or by body disorder they usually treat their "Khwan" (vital energy) because when the body is ill, "Khwan" is weak or ill too, So that after they get well they have perform a ritual which they call "Hong Khwan" (ฮ่องกงขวัญ; calling back the vital energy) and "Sue Khwan" (สู่ขวัญ; to activate or rehabilitate vital energy). It means their mind or spirit is cured and they are completely cured.

Traditional health care in "Lanna" culture has diverse curative methods which depend on the cause of sickness related to the supernatural cause and these caused by factors such as wrong behavior or misfortune caused by evil "Karma" from a previous life. Taoprasert (2000) classified the "Lanna" traditional medicine into 5 major groups, in which each group also comprises several methods/ measures, as demonstrated in Figure 2.1. (Taoprasert, Y., 2000)

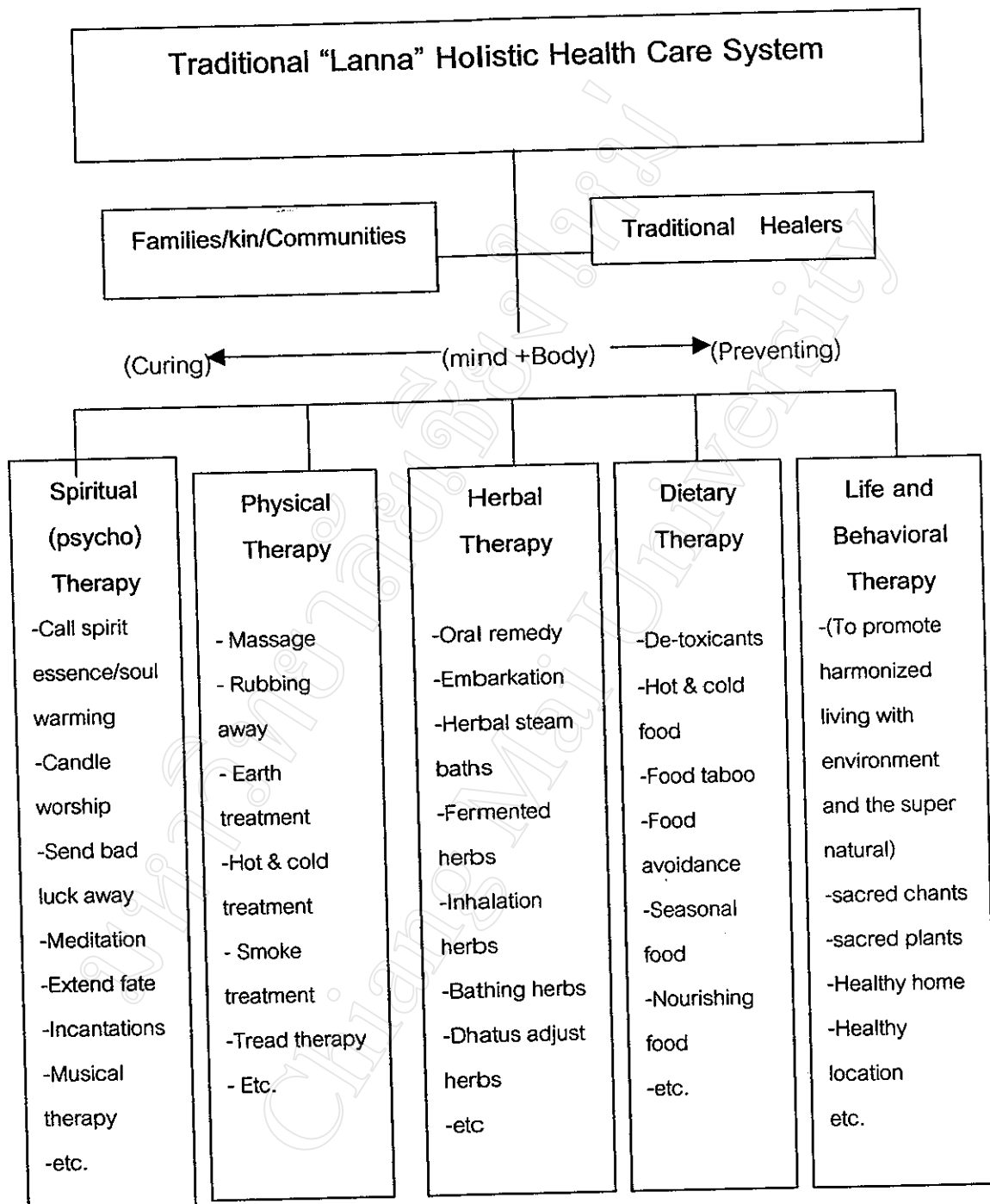


Figure 2.1 Traditional "Lanna" Holistic Health Care System

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The diagram in Figure 2.1 shows that the traditional health care practices of "Lanna" culture were based on the causes of disease. Treatment methods vary depending on healer's skills and specialization. Herbal therapy was the main method for

treatment together with spiritual therapy. Tian-ngam (1999) explained the ways of using herbal medicine according to different objective such as used to cure the symptoms or reduce harm from such symptoms; used to cure the cause of the disease; used to reduce the severity of the disease and used to rebuild or compensate what the body is lacking. (Tian-ngam, T. 1999 in Taoprasert, Y. 2002).

Those were normally in the daily life of people in "Lanna" culture, and "Lanna" healers were more thoroughly learned in indigenous knowledge than the others, so they were trusted to be the leaders of health practice and the spiritual leaders and to have a role in the society and culture. In this way we can not separate traditional medicine from the community.

## 2.5 Herbal Medicine

### 2.5.1 The history of herbal medicine

The origin of the use of plants as medicine is out of record. Some herbs were found carefully tucked around the bones of a Stone Age man in Iraq, and continue to be used today. In 2735 B.C., the Chinese emperor "Shen Nung" wrote an authoritative treatise on herbs that is still in use today. The records of King Hammurabi of Babylon (c. 1800 B.C.) include instructions for using medicinal plants, and prescribed the use of Mint for digestive disorders.

The countries of the Middle East have a rich history of herbal healing. There are texts surviving from the ancient cultures of Mesopotamia, Egypt, and India that describe and illustrate the use of many medicinal plant products. In the sixth century B.C., there were found the admonition regarding plant life and the fruit thereof shall be for meat, and leaf thereof for medicine. Egyptian hieroglyphs show physicians of the first and second centuries A.D. treating constipation with senna pods, and using caraway and peppermint to relieve digestive upsets.

Throughout the Middle Ages, for the most part, herbal healing lore was passed from generation to generation. Mother taught daughter while the village herbalist taught a promising apprentice. By the seventeenth century, the knowledge of herbal medicine

was widely disseminated throughout Europe. The herbal pharmacopeia was one of the first manuals that a person could use for health care, and it is still widely referred to and quoted today. The first U.S. Pharmacopeia was published in 1820. This volume included an authoritative listing of herbal drugs, with descriptions of their properties, uses, dosages, and tests of purity. Once scientific methods were developed to extract and synthesize the active ingredients in plants, pharmaceutical laboratories took over from providers of medicinal herbs as the producers of drugs. The use of herbs, which for most of history had been mainstream medical practice, began to be considered unscientific, or at least unconventional, and to fall into relative obscurity. (Ernst, E., 2000; Lee, R. & Balick, M.J., 2001)

In Thailand, people use herbal medicine in their way of life by word of mouth, used as alternative medicine in chronic diseases, used as health supportive, and tonic, medicinal plants were allowed to be sold in traditional pharmacies. During the 4<sup>th</sup> to the 7<sup>th</sup> National Economic and Social Development Plans, herbal medicine was promoted for self reliance, In the 8<sup>th</sup> Plan the government promoted it for economy and developed quality standards of QC and GMP emphasis to the Small and Medium Enterprises (SMEs) and industry, aimed at export for increasing the income of the country, and five herbal medicines were accepted into the National Drug List and popularly used in hospitals and communities, These are "Ka-Min-Chun" (ขมิ้นชัน; *Curcuma Longa* Linn), Fa-Tha-Lai-Jone (ฟ้าทะลายโจร; *Andrographis paniculata* Wall.ex Nees), Chum-Hed-Tad (ชุมเห็ดเทศ; *Cassia alata* Linn) , Van-Hang-Jo-Ra-Kae (ว่านหางจระเข้; *Aloe aberdenist Vera.* ) and Sa-led-Pung-Pon(เสลดพังพอน; *Clinacanthus nutans* Burm.f. Lindau).

### 2.5.2 Herbal medicine today

Davis (1999) found that there were various methods of producing traditional herbal medicine which are rendered by the traditional pharmacist into a consumable form including infusion, boiling, and pulverizing with a mortar and pestle. These methods allow the traditional pharmacist to manufacture pills, lotions, powders, suppositories, inhalants and preparations for steaming. Dosages are adjusted

individually for each patient depending on the individual's personal characteristics and diagnosis (Davis Patricia, A., 1999).

However, Sanderoff (2000) reminded those using herbal medicine that they have to use them with caution and respect. Today herbs are commercially available in many forms such as dry herbs in the form of tea, aqueous-alcoholic tinctures, capsules, tablets and poultices; some are in single products or in combination with other herbs in formula for special clinical outcome or treatment. He suggested that people who want to use herbal medicine have to make sure the herbs have been standardized, in a process of analysis by which a minimum percentage of an individual ingredient is known to be contained within an amount of raw herbal material, because the concentration of a particular ingredient within an herb can vary for numerous reasons; climate, use of chemicals and pesticides, time of year of harvesting etc (Sanderoff. B. T. 2000).

Herbal medicine has become a topic of increasing global importance, having repercussions on both world health and international trade. Recognition of the medical and economic benefits of plant-based medicines is growing in both developing and industrialized countries. Mahady(2001) studied the use of herbal medicine during in the past 10 years. Herbal medicine has enjoyed a revival in many industrialized countries, including the United States, Canada, Australia and Europe. It increased by 380% between 1990 and 1997 in the United States. This has been fueled by strong consumer interest in preventative medicine, disappointment with allopathic medicine and the perception that botanicals are safe and free from side effects. He estimated global market data for plant-based medicine from worldwide sale of herbal products are in the range of 16-20 \$ billion/year. Within the European community, herbal medicine represents an important share of the pharmaceutical market, with annual sales in the range of \$ 7 billion. To market herbal medicine in Europe, manufacturers must obtain a "marketing authorization" from the regulatory authorities; this requires the submission of a formal dossier providing scientific proof of the safety and efficacy for each product. 80% of the population in these countries depend on traditional systems of medicine as

a source of primary health care. It is reliance on plants as a source of medicine. (Mahady,G.B. 2001)

Herbal medicine is also coming under increasing government regulation globally. The figure below shows many countries now have legislation governing its production, marketing and use.



Figure 2.2 More and More countries are regulating herbal medicine

Source: World Health Organization, 1998 and data collected by World Health Organization during the period 1999-2001 (World Health Organization, 2002).

In Thailand, Subcharoen(2001) concluded that, in 1996, herbal medicine imports were 12,460,149 kilograms for a value of 316,882,878 baht, this was an increase of 54.17% from 1994. The most significant were spices and medicinal plants, amounting to 42.24% of the total import of herbal medicine. The import of traditional medicine increased , as shown in Table 2.1

Table 2.1: Production and importation of traditional medicine in Thailand during 1995- 1999 ( /million baht )

Years	Traditional medicine production			Imported traditional medicine		
	For human	For animals	Total	For human	For animals	Total
1995	303.548	0.933	304.481	137.633	-	137.633
1996	318.215	1.084	319.289	136.848	-	136.848
1997	251.808	0.388	252.196	173.690	-	173.690
1998	484.998	0.731	485.729	99.132	-	99.132
1999	539.039	0.655	539.694	107.403	-	107.403

From: Division of Drugs Protection, 1999.

The table shows that from 1995 the value of production has increased and the value of imported products has decreased. The author explained that the trend of production in our country will increase in spite of the imports from other countries. And she commented that there were 800-1,000 kinds of medicinal plants for traditional medicine production, but only 400-500 kinds were used in Thai traditional medicine. The Division of Medicine Plant Research and Development, Department of Medicinal Sciences, Ministry of Public Health, found that there were 20 kinds of medicinal plants which used more than 3,000 kilograms, such as Kra-chai (กระชาย; *Boesenbergia rotunda* L. Mansf.), King (ขิง; *Zingiber officinale* Rosc.), Kan-Plue (กานพลู; *Eugenia earyophyllus* Bullock et Harrison), Cha-Am-Ted (ชะเอมเทศ; *Glycyrrhiza glabra*), Bor-Ra-Ped (บอระเพ็ด; *Tinospora crispa* L. Mier ex Hook.F&Thoms), Prig-Tai (พริกไทย; *Piper nigrum* Linn), Ma Li (มะลิ; *Jusminum adenophyllum*), Dee-Plee (ดีปลี; *Piper retrofractum* Vahl.) etc. (Subcharoen P. 2001).

### 2.5.3 Research and development of herbal medicine

Trends of herbal medicine use have resulted in many researchers finding new drugs from herbs, and developing traditional medicine by using the model of modern medicine. They have raised serious questions about their quality, safety and efficacy.

There are further concerns over the perceived lack of adequate regulation of herbal medicine in many countries and the encouragement of the sale of unregistered products, which are not controlled by the government (DeSmet,1995 in Mahady,G.B.,2001)

There are over 750,000 plants on earth, but only a few of the healing herbs have been studied scientifically. And because modern pharmacology looks for one active ingredient and seeks to isolate it to the exclusion of all the others, most of the research that has been done about plants continues to focus on identifying and isolating active ingredients, rather than studying the medicinal properties of whole plants. Herbalists, however, consider that the power of a plant lies in the interaction of all its ingredients. Plants used as medicines offer synergistic interactions between ingredients both known and unknown. The efficacy of many medicinal plants has been validated by scientists abroad, from Europe to the Orient. Modern technological science can now identify some of the specific properties and interactions of botanical constituents which is useful to know why certain herbs are effective against certain conditions.

Chaudhury (1996) stressed that researchers should keep in mind that,

*" It is very interesting to note that researchers and practitioners of traditional system of medicine do not have any reservation about the use of modern technology for developing methods for standardization. In fact, these researchers have often stressed not only that all modern methods should be used and that these methods are not always adequate and that more sophisticated and more advanced test should be devised."*

He also recommended that researchers have to utilize both systems and should deal with collaboration at the following levels:

- A) at the primary health care level
- B) at the first referral and district health center level
- C) at the teaching hospital or tertiary center level
- D) in research for development of new medicines.
- E) In the training of doctors and traditional practitioners.



In the field of primary health care, the government should help traditional healers and allow them to function outside the framework of the National Health Service controlled specialists in the allopathic system of medicine, and providing training to them by their own teachers and specialists. In this way traditional healers will have regular supplies of herbal medicine of good quality. Then give them recognition for the service they are providing to the people in the country. This will be much more rewarding than insisting all medicine used by them should undergo clinical evaluation for efficacy. The two systems-allopathic and traditional system of medicine should be integrated and traditional medical practitioners be brought within the existing framework of national health services (Chaudhury, R.R.,1996).

In developing countries, a positive scientific assessment of medicinal herb used in traditional medicine will facilitate their integration into the national health care systems. Mahady (2001), said that resulting in widespread use of an effective herb for a valid therapeutic indication, the proper use of herbal medicine had a twofold benefit. There is a potential for establishment of industry and international trade in developing countries. New industry and trade bring employment to these countries and thereby promote a better standard of living. Industrialized nations also benefit by harmonization of health claims. Accurate scientific assessment will provide assurance of safety, establishment of efficacy and standards for quality, which will contribute to the over all health and safety. Accurate scientific assessments of herbal medicine will give health care professionals the confidence to employ these products in their everyday practice, thereby facilitating of safe and effective of herbal medicine into medical armamentarium. (Mahady,G.B.,2001)

Both scientists in China, and a group of Ayurvedic researchers stressed the importance of developing good methods for standardizing crude extracts, decoctions and compound formulations which consist of different ingredients. For example, Chinese investigators were not formerly so worried as they are now, about standardization of herbal medicines. They were not very concerned about clinical pharmacological concepts in clinical trial methodology. This enabled them to go ahead and make

advances and use medicinal plants both for research and for therapeutic effect. Research, therefore, should be carried out to develop the methodology needed for the standardization of such preparations as otherwise these could never be used either for primary health care or more widely. (Hiller, S. M. & Jewell, J.A., 1982)

It would also be important to make certain that the raw herbal material is of good quality, is unadulterated and can be tested for quality assurance. Finally, steps need to be taken for proper storage of these herbal substances and distribution, at regular intervals, to the primary health centers so that the herbal medicines will be available. These are important things to do but by doing this one makes certain that herbal medicines will be used more effectively than they are being used at this time at the primary health care level. It will be much more useful to spend time, money and resources on the activities than in carrying out clinical trial of herbal medicines used at the primary health care level.