Traditional Medicine and Medicinal Plants: Utilization, Policy and Research in Thailand

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Abstract

The study discusses the origins of traditional Thai medicine and its dissemination to the Thai population in the context of health care and herbal medicine from the Sukhothai era to the present, including the current situation in Thailand where traditional medicine is being utilized, training, and human resource development. Research in the field of traditional medicine in Thailand and the results of medicinal plants, as well as plant species that can be used in other developing countries, are reviewed. Quality assurance in the lab and clinical settings, standard production and cultivation, and quality assurance at the end of the supply chain are also discussed. Finally, an overview of traditional medicine-related policies and the process of integrating traditional medicine into the health care system in Thailand is provided, along with obstacles and examples of good practices in this area.

Keywords

Traditional medicine, medicinal plants, health care system.

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INTRODUCTION

The World Health Organization defines traditional medicine as "health practices, approaches, knowledge and beliefs incorporating plant, animal and mineral based medicines, spiritual therapies, manual techniques and exercises, applied singularly or in combination to treat, diagnose or prevent illness or maintain well-being" (WHO, 2003, 1). This definition is incredibly broad and includes a variety of different practices originating in countries all over the world. Commonly used therapeutic techniques for traditional medicine include herbal medicines, acupuncture/acupressure, manual therapies, spiritual therapies and exercises (WHO, 2002, 1).

Although in reality many communities practice traditional medicine as part of health care, allopathic health professionals, particularly medical doctors are not always supportive of traditional medicine. They fear that the use of cheaper, more cost-effective traditional therapies might compromise their economic role in the market while questioning the safety and efficacy of untested therapies. Of all diseases, thirty percent are serious and require modern medicine and health care specialists while seventy percent are less serious, often preventable diseases that can be treated using traditional or folk medicines (Department for Development of Thai Traditional Medicine, 7).

This statistic presents a promising ideal for the role of traditional medicine in primary health care. If health care systems, particularly those in developing countries, were able to operate on this principle, many health problems could be solved at the community-level without the unnecessary intervention of specialists with sophisticated technological procedures.

Thailand presents a particularly valuable model for the integration of traditional therapies into the health care system. Traditional medicine in Thailand is approached from a holistic perspective, with the idea that many factors contribute to a person’s overall health and that a multitude of factors must be targeted to improve health as opposed to focusing exclusively on the narrow perspective of pathological disease. Thai traditional medicine identifies four factors that contribute to overall health (Department for Development of Thai Traditional Medicine, 4–6):

- **Body**: Centers on the regular consumption of herbal foods in accordance with one’s dominant element and proper exercise.
- **Mind**: The ability to generate concentration towards inner peace and enlightenment with the idea that this process enhances the immune system. A significant portion of this process includes resisting self-indulgence.
- **Society**: The importance of family, with an emphasis on respect for parents and grandparents. Privileges the ideal of forgiveness and contributing more than you take from society including helping those in need.
- **Environment**: The vital need to grow more medicinal plants with the goal of serving as the world’s "medicine bank." Also upholds the need to protect the environment, biodiversity and endangered species.

The holistic perspective states that these factors must be addressed simultaneously in order to achieve improvements in both individual health
and population health.

In order to understand the basics of Thai traditional medicine, an understanding of the fundamental principles is useful. In addition to using a holistic perspective, Thai traditional medicine cites three main causes of illness including (Chokevivat, 3):

- Supernatural power: Illness is caused by an adverse exertion of power from an ancestor soul or spirit, which may be punishment for a bad deed.
- Power of Nature: Illness is caused by an imbalance in the body’s four elements or an imbalance of heat and cold.
- Power of the Universe: Illness is caused by the positive and negative influences of the sun, moon and stars.

Traditional medicine practitioners also state that the seasons, time of day, age, where one lives, inappropriate behavior and strong emotions can impact an individual’s health. Advice for staying healthy consists of eating foods that are compatible with one’s element, which is determined by the time and location of their birth. In Thai, the dominant element is called the Tard-Chao-Ruan and traditional practitioners identify an individual’s element in addition to performing a physical exam when diagnosing patients (Chokevivat, 4). In summary, the Thai holistic medical approach places the emphasis on health instead of disease by recognizing the wide range of factors that affect health status beyond solely pathological conditions.

Traditional medical treatments vary dramatically in accordance with the type of practitioner and the training they have received. In Thailand, traditional medical practitioners are heavily influenced by Buddhism and frequently their treatments are drawn from the beliefs of this religion. Examples of treatments include (Chokevivat, 4):

- Correcting inappropriate behaviors.
- Attributing illness to naturally-determined factors and prescribing an herbal treatment to combat symptoms.
- Kayanamai: Encouraging behaviors that promote a healthy body such as exercise and eating healthy foods.
- Jitanamai: Encouraging behaviors that promote a healthy mind such as meditation.
- Jevitami: Encouraging behaviors that promote healthy living such as living one’s life in accordance with Buddhism.

Although treatments vary widely even in Thailand, a central importance is placed on a patient’s control and responsibility for their own health. This principle of taking care of oneself physically, socially and spiritually is integral to a Buddhist conception of healthy life. Thai traditional medicine is different from allopathic medicine in that it recognizes the behavioral, environmental, social and spiritual elements that ensure good health as well as the physiological ones. Although research relating to these other health factors is scarce, traditional medicine lends a credibility gained by centuries of use in cultures all over the world. Health education, preventative medicine, simple curative tests and mental health have been identified as areas of particular value for the integration of traditional medicine into the health care system (Evaluation and Planning Centre for Health, 23). The future of health, particularly the treatment of
chronic and lifestyle-related diseases lies in the ability of health professionals to adopt this type of holistic health approach.

China, Korea and Vietnam have already successfully integrated traditional medicine into their health care systems (WHO, 2003, 2). As of 1999, Thailand had managed to integrate traditional medicine in some form into seventy-five percent of its health facilities (WHO, 2001, 142). Thailand is an especially valuable model for countries attempting to modify existing health care infrastructure instead of building new infrastructure. In the last decade, they have made incredible strides to integrate traditional medicine into a medical system that was originally established and dominated by allopathic medical professionals. They have successfully encouraged conflicting constituencies to collaborate in working towards the goal for health for all. Their struggles in the areas of regulation, research and registration of practitioners can serve as valuable case studies for countries looking to advance the utilization of traditional medicine in their health care systems.

Relevance of Herbal Medicine to Thailand

The World Health Organization estimates that a large proportion of the world’s population relies heavily on traditional practitioners and medicinal plants in order to meet primary health care needs (WHO, 1999, 1). Since safety and efficacy data are often not available for these drugs, the field of herbal medicine and medicinal plants requires additional research and further scholarship in the future. Thailand has a particularly rich history relating to the use of traditional medicine and in rural areas where access to Western medical treatments is too expensive or simply not available. As medical scientists and health professionals continue in their attempts to better understand the health behavior of populations, the field of herbal medicine is an important component in that process. By studying herbal medicine in Thailand, health professionals can aid in the dissemination of information relating to new and more cost-effective treatment options as well as reduce behaviors that may not be helpful for a particular condition or may interact adversely with Western medical treatments.

Finally, the most important reason to study herbal medicine in Thailand is to expand access to relevant and affordable treatment options. One-third of the world’s population and up to half of the populations in the poorest parts of Asia and Africa do not have access to essential drugs (WHO, 2001, 3). For these populations, traditional medicine presents a particularly promising opportunity to bridge the gap between those who need health care and the services available. Particularly in Thailand, medicinal plants are available for collection from the surrounding physical environment. Preparation of these plants for treatment involves preparing a tea, tincture or filtrate. Since these methods are inexpensive and can be performed with a minimal amount of training, herbal medicine holds great promise for use in a primary health care environment.

History of Herbal Medicine

The earliest known use of herbal medicine in Thailand was documented on stone pillars during the time of King Ramkamhaeng’s rule in the
The art of traditional Thai medicine was passed from father to son and many herbs were used to treat a single disease or symptom. The roots of traditional medical practices in Thailand include a mixture of Indian, Ayurvedic and Thai beliefs. During the Sukhothai period, over one hundred hospitals where traditional medicine was practiced, called Arogaya Sala, were built (Chokevivat, 1). This period of history began a long tradition of royal support for traditional medicine methods and techniques that would not be challenged until the nineteenth century.

Later, during the Ayutthaya period, the first official textbook of Thai drug recipes was written titled “King Narai’s Medicine” (Chokevivat, 1). This textbook was the precursor for the books used today in programs of traditional medicine instruction. Traditional drug formulations were also recorded during the reigns of King Rama I, II and III when instructions were inscribed on stone tablets at the temples Wat Po and Wat Raj Oros. King Rama V, supported the production of the first medical textbook called “Tumra Paetsart Sonka” and the national formulary of drugs called “Tumra Chabub Luang” (Chokevivat, 1). These are two of the official books currently being used by the Thai Food and Drug Administration in their attempts to register traditional medicines. The royal family encouraged the availability of knowledge related to traditional medicine techniques and herbal drugs in order to provide people with greater agency over their health. These kings thought that Thai people were capable of growing medicinal plants and using them to care for their families and communities.

In the 1840s, American missionaries introduced Western medicine and the first modern medical school was established in Thailand at Siriraj Hospital in 1888 (Muangman et al, 1). In the beginning, the medical school curriculum consisted of both traditional and Western methods, but in 1915 the traditional medical courses were dropped and the decline of traditional medicine in urban areas became apparent (Chokevivat, 2). This division between rural and urban medical practices was visible in their training and classification. Royal doctors were paid by the government, served as government officials and were most often educated at allopathic medical schools. Common doctors worked in rural areas and learned their skills by doing an apprenticeship with an experienced practitioner. These doctors were paid less and were significantly less well-respected (Brun & Schumacher, 5). This division between royal and common doctors has evolved into the schism between allopathic medical doctors and traditional practitioners. This separation is one that must be bridged in order for a successful integration between two valuable schools of thought in the Thai health care system today.

Globally, interest in traditional medicine was rekindled in the late 1970s in conjunction with the World Health Organization’s conference on indigenous medicines in 1977 and the Alma Ata Conference in 1978. In response to these events, the Ministry of Public Health in Thailand included a policy to promote traditional medicine use in primary health care in the National Economic and Social Development Plan (1977-1981). Since then sixty-one medicinal plants have been recommended for primary health care and several
modern herbal medicines have been researched, developed and recommended as alternatives to Western medicines (Chokevivat, 2). In October 2002, the Department for the Development of Thai Traditional and Alternative Medicine was established under the Ministry of Public Health. Over the course of the last twenty years, interest in the production and standardization of herbal medicine use has emerged in Thailand. The Herbal Products Research and Development and Complementary Medicine Project of Chaophya Abhaibhubejhr Hospital has served as a pioneer initiative in this area. Their philosophy involves starting with the treatment of uncomplicated illnesses and symptoms with skin creams, ointments and cough syrup and progressing to treatment methods for more complicated diseases. Including a commitment to using herbal medicines with sufficient toxicity data to ensure their safety and a long tradition of use in local communities, they also support local organic farmers and adhere to Good Manufacturing Practices (GMP). Currently, they produce seventeen herbal medicines and many other products including dietary supplements, cosmetics and nutritional beverages (Chaophya Abhai-bhubejhr Hospital, 2003). Their current projects include the development of training programs for both foreigners and locals in the use of herbal medicine.

Utilization of Herbal Medicine

Even though traditional medical practices did not receive institutional or governmental support after the turn of the century, their utilization continued to be high. It is difficult to determine the actual magnitude of traditional medicine use in Thailand because it covers such a broad array of procedures and techniques and today the majority of usage occurs in rural areas where primary health care resources are scarce. Often, basic public health issues such as water sanitation and control of infectious diseases take precedence over epidemiological data collection in small community-based health centers or public health projects based in rural areas. Therefore, studies on the utilization of herbal medicines in Thailand are often limited to areas where resources are greater. In 1999, one such study reported that when given a choice, 1.8% of people consume traditional medicines instead of modern medicines for some conditions (Chokevivat, 12). One unique study performed by the Faculty of Public Health at Mahidol University in 1983 examined herbal medicine usage in a series of rural areas throughout Thailand. This study found that fifty-seven percent of study respondents had used herbal medicine in the previous year (Muangman et al, 6). The majority of both urban and rural respondents reported buying herbs at a local drugstore or directly from a traditional practitioner. The study found that over two hundred drugs in nearly fifty provinces were currently in local use. Over eighty percent of study respondents wanted more information on herbal medicine and the same number reported that in their experience herbal drugs were more effective than their Western counterparts. The study concluded with recommendations for further research into the use, efficacy and effectiveness of herbal medicines. Specific suggestions included compiling a list of essential herbal drugs, developing a curriculum...
to teach herbal medicine at all levels of the school curriculum and encourage collaboration between universities, the Ministry of Public Health in Thailand and public health experts.

**Human Resources: Training and Traditional Practitioners**

Initially, traditional medical practitioners were trained by older members of their families or communities, most often in a father-to-son exchange of knowledge and skills. This teacher-student mentoring relationship still predominates in the rural areas, although fewer and fewer young people are entering the practice of traditional medicine in this way. Currently, there are a small number of educational programs available in Thai traditional medicine. The first program is the Society of School of Thai Medicine, which has a one-year program in pharmacy and a three-year curriculum in traditional medicine. At the conclusion of the program, technical and practical exams given by the Ministry of Public Health certify students to practice traditional medicine in their communities (Chokevivat, 4). The second program is offered by the Ayurved Vidhyalai School. The program was started by Dr. Ouy Ketusigh in 1982 with the mission of training traditional practitioners with a background in anatomy. Graduates from this three-year program can use some modern medical equipment, but are only permitted to prescribe herbal medicines (Chokevivat, 5).

In addition to the more formal programs in traditional medicines, three Thai universities offer a bachelor’s degree in traditional health care. They are Mahasarkarm University and Sukhothai University, which are both public and Rangsit University which is private (Chokevivat, 5). Recently, the Institute of Thai Traditional Medicine of the Ministry of Public Health has begun to offer programs in pharmacy and traditional medicine and training programs in massage. Hopefully, these educational opportunities in traditional health care will expand and proliferate over time to serve the large number of people in rural Thailand with little access to primary health care.

It is difficult to identify the actual number of traditional medicine practitioners operating in Thailand. For many years, traditional practitioners in rural areas received training from an older family or community member and frequently did not report their medical treatment activities to the government. Currently, the Department of Thai Traditional and Alternative Medicine has initiated an attempt to determine the magnitude of traditional practitioners. These figures can serve as valuable proxies in researching the number and characteristics of traditional medicine users. The following figures are from 2002 (Chokevivat, 7):

<table>
<thead>
<tr>
<th>Table 1 Licensed Traditional Health Professionals</th>
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<tr>
<td><strong>Type of Practitioner</strong></td>
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<tr>
<td>Traditional Medical Practitioners</td>
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<tr>
<td>Thai Traditional Practitioner</td>
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<td>Traditional Pharmacists</td>
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<td>Traditional Midwives</td>
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The figures above represent the number of licensed health professionals in Thailand. This means that these individuals have taken the licensing exam provided by the Ministry of Health.
in order to be recognized by the government. The difference between a traditional medical practitioner and a Thai traditional practitioner is that the former have a training based in physiology and have completed a government licensed program while the later learned their trade via an apprenticeship and sat for the licensing exam at a later date. This data does not include the number of rural practitioners who are not licensed.

One interesting note regarding the dynamic trends of these figures is that the number of traditional practitioners and midwives are decreasing, while the number of traditional pharmacists are increasing (Brun & Schumacher, 229). This pattern suggests that the cultivation and production of medicinal herbs in Thailand is increasing, while the number of medical professionals with knowledge of them is decreasing. The declining number of traditional practitioners has profound implications for the process of preserving the valuable knowledge and methods of traditional medicine.

Herbal Medicine Research

Historically, the field of herbal medicines has received little research funding, although in the last ten years interest in traditional remedies has been revived. The Medicinal Plant Institute in conjunction with the Institute of Traditional Medicine are currently conducting toxicity studies on commonly used Thai traditional medicines. This research has led to the development of several promising herbal treatments including senna alata herbal tea for constipation, clinaancanthus nutans for herpes simplex and herpes zoster infections, aloe vera gel for burns, capsicum gel for myalgia and piper betle gel for fungal infections of the skin (Chokevivat, 10). Four examples of Thai traditional medicines that are currently on the international market include (Department for Development of Thai Traditional and Alternative Medicine, 12):

- *Zingiber cassumunar*: (common name: Plai; market name: Plaitanoid) This herb is of the same genus and ginger and is the main ingredient in the hot herbal compresses used for massage. Research has confirmed its anti-inflammatory activity. Route of administration is via creams or gels to relieve muscle and joint pain.

- *Pueraria mirifica*: This herb is from the same family as the soybean and contains the corresponding phytoestrogenic compounds. It is used by aging women for rejuvenation, to relieve menopausal symptoms and treat age-related health problems.

- *Andrographis paniculata*: Recently, this herb has been under extensive research which has proven its safety, efficacy and effectiveness for relief of fever and sore throat associated with the common cold. It has also been effective in treating non-infectious diarrhea.

- *Curcuma longa*: (common name: tumeric) This spice is one of the most frequently used herbal medicines in Thailand. Thai tumeric is significantly more potent than breeds found elsewhere in the world. It is effective for treating flatulent dyspepsia and is used as a dietary supplement for its chemopreventative effects. For the first time in 1999, the National List of Essential Drugs in Thailand included five herbal
drugs (Chokevivat, 10). This type of research presents a promising possibility for advancement in the field of herbal medicine. If research on Thai traditional drugs can start to demonstrate the safety, efficacy and effectiveness of medicinal plants, their utilization can be expanded both within Thailand and around the world.

Outside of the research specifically occurring in Thailand, research on medicinal plants has the potential to dramatically affect the public health and quality of life for people living in the developing world through both preventative and curative treatments. The following examples of uses for medicinal plants utilize traditional methods of administration. These common routes include paste, juice, infusion or tea, powder, decoction (used for barks), syrup, pills and medicated wine or oil (WHO, 1990, ix-xi). Herbal drugs with these methods of administration were chosen, because when a drug is consumed orally, digestive enzymes in the stomach protect the body from being affected by some contaminants. For this reason, production can take place on a household or community level. This local preparation is essential if primary health care aims are to be extended by the use of medicinal plants.

One subject of recent research is the use of plants to reduce cases of foodborne illnesses. Studies demonstrate that extracts and/or oils of garlic, cinnamon, curry, mustard, basil, ginger and other herbs exhibit antimicrobial properties. In general, Gram positive bacteria are more sensitive to plant extracts due to the composition of their cell membranes (Alzoreky et al, 223). This area of research holds promise for reducing the burden of foodborne pathogens in the developing world where chemical preservatives may not be available.

Another area of recent success in the research of herbal medicines is the treatment of nephrolithiasis, or kidney stones. Kidney stones are a common problem in Northeastern Thailand affecting between 0.38% and sixteen percent of the population (Premgamone et al, 654). Despite surgical removal of stones, the disease frequently reoccurs. Locally a tea made from orthosiphon grandiflorus (OG), a tropical bush of about one-meter in height is used to treat kidney stones. The mechanism involves the capacity of the alkaloids in OG tea to raise the pH of the urine therefore dissolving stones and preventing further stone formation.

The conventional Western treatment for kidney stones involved the use of sodium potassium citrate (SPC), a drug that has significant adverse effects. OG tea has no adverse effects and ninety percent of subjects reported a decrease in other adverse symptoms including back and joint pain, fatigue, dyspepsia, headaches, abdominal pain and fever (Premgamone et al, 659). Although SPC reduced stones to a greater degree, OG tea was found to be a safer, more economical and gentler alternative to conventional treatment. Since OG grows naturally in Thailand, it holds great possibility for use as a prophylactic or for kidney stone treatment when SPC is not available, causes adverse effects or is too expensive.

Laboratory and Clinical Testing

The World Health Organization states that between two and twenty-five percent of modern...
medicines are made from plants that were first used traditionally (2003, 2). It is impossible to measure the number of valuable treatments used by traditional practitioners that could be disseminated to the general public with resulting benefits for both individual and public health. The process transpiring between the proposal of an herbal medicine for treating a particular disease or symptom and its production and distribution via a modern medical system is a long and arduous one. In order to ensure safety, efficacy and quality of herbal drugs, an elaborate process must occur including a series of clinical and non-clinical trials.

In the process of herbal drug testing, non-clinical trials initially take place to identify the active components of a plant and to test for toxicity. Objectives for non-clinical trials include: determining whether or not the clinical use of herbal medicines can be scientifically supported, characterizing the range of pharmacological actions of herbal medicines, defining the characteristics of pharmacologically active natural products and determining their mechanisms or actions. The types of non-clinical trials are as follows (WHO, 1993, 12):

- Pharmacodynamic: These trials determine the therapeutic affect in non-human systems.
- Pharmacologic: These trials define the active components of a medicinal plant.
- Toxicologic: These trials determine safety and toxicity of a medicinal plant.

Non-clinical trials are essential for ensuring the preliminary safety and efficacy of herbal medicines before they proceed to clinical trials involving human subjects.

After an herbal drug has passed both safety and efficacy non-clinical tests, it can begin to be tested on people. Clinical trials involving human subjects must be in accordance with principles of justice, respect, beneficence and maleficence (WHO, 1993, 6). In other words, when people are involved in drug testing, researchers must take the utmost care to uphold ethical obligations not to harm. Clinical trials are structured in four phases to assist in process (WHO, 1993, 18–19):

- Phase I: Involves a small number of ill or healthy volunteers with the goal of determining tolerance and appropriate dosage.
- Phase II: Involves a limited number of patients and is preferably randomized and double-blind with a control group. The purpose of this stage is to determine the efficacy and confirm the safety of the medicinal drug in question.
- Phase III: Involves a larger patient group and is randomized and double-blind in conditions that are as close as possible to actual usage. In addition, this phase is often conducted at several testing sites.
- Phase IV: Performed after the drug is available for general use in order to detect rare adverse effects. Must involve a very large, population level, testing group.

The stated guidelines above are very similar to those for research and development of non-herbal medicines.

The ideal of performing an elaborate set of laboratory and clinical investigations on a new herbal drug to scientifically prove its safety and efficacy is a noble idea. However, securing the enormous amount of funding required for this endeavor can be an insurmountable obstacle for...
a developing country with little money to spend on research and development. This concern becomes particularly pertinent when considering the fact that many herbal medicines have been prescribed by traditional practitioners for generations. In this light, a new question arises of what is necessary to demonstrate effectiveness. If a significant portion of the population has been using a particular treatment with success for centuries, is it necessary for it to undergo rigorous laboratory and clinical testing? Scientists, policy-makers and public health officials must debate these questions as they participate in traditional medicine funding allocation decisions. Every situation is different and many courses of action may be appropriate depending upon the priorities of a particular health care system.

Herbal Medicine Production and Quality Assurance

The Food and Drug Administration in Thailand is currently drafting a new drug law that identifies four drug classification categories (Chokevivat, 13):

- Traditional Drugs: These drugs have not been tested, but they have been used for generations.
- Modified Traditional Drugs: The dosage and route of administration have been modernized, but the medicinal plant has not undergone clinical testing.
- Phytopharmaceuticals or Modified Modern Herbal Drugs: Plant abstracts made in modern dosage forms.
- Purified Active Substances: Clinically proven herbal drugs that are registered as new modern medicines.

Drug researchers envision that eventually all herbal drugs will either be proven ineffective or achieve the classification of purified active substances. However, Thailand has made great strides in making drugs accessible by classifying them in this way without attempting to prohibit their usage.

The Thai government, particularly the Ministry of Public Health, has encouraged medicinal plant cultivation on a local level under the “One-Tumbon-One-Product” policy. Currently, twenty-seven herbal medicine drugs can be sold to customers anywhere in Thailand (Chokevivat, 13). One successful example of this policy is the Chaophya Abhaibhubhr Hospital. This hospital has successfully integrated traditional medical treatments with allopathic medicine. In order to obtain the medicinal plants necessary for traditional medicines, they have employed local organic farmers. By involving the community in the production of herbal medicines, the hospital is improving the economic situation of local people and increasing their knowledge and capacity to use medicinal plants. Hopefully in the future, local growth of medicinal plants along with the use of traditional medicine in primary health care can be expanded to other underserved rural areas in Thailand.

Quality control is a very serious issue in the production of herbal medicines on a local level. The Medicinal Plant Research Institute in Thailand has stated that it is important to standardize the cultivation and production of herbal medicines. The information required for
standardizing production includes: all names used (common and scientific), morphological descriptions of the plant and its habitat, specification of the part used, chemical constituents, preparation procedure for the crude drug, methods of cultivation, harvest instructions and post harvest handling, packaging and storage (Medicinal Plant Research Institute, 5). In addition to these detailed instructions, the institute has defined the maximum acceptable levels of contamination in order to ensure human safety. Types of contamination consist of microbial contamination, pesticide residue contamination, arsenic and heavy metal contamination and radioactive contamination (Medicinal Plant Research Institute, 19-20). Although not all producers of herbal medicines in Thailand currently follow these guidelines, an increasing number of companies have started to comply in order to gain market credibility. This is a positive step for Thailand in terms of quality assurance for herbal drugs and possible expansion to international markets.

**Traditional Medicine Policy**

In 2002, the World Health Organization launched its first comprehensive strategy concerning traditional medicine. The plan includes measures to (WHO, 2003, 2):

- Develop national policies on the evaluation of traditional medicine including essential herbal medicines.
- Create a stronger evidence base on the safety, efficacy and quality of traditional medicine products and practices.
- Ensure availability and affordability of traditional medicine.
- Promote therapeutically sound use of traditional medicine by providers and consumers and document traditional medicines and remedies.

In this document, the World Health Organization recognized that patent laws were inadequate protections for traditional knowledge and they urged national governments to determine policies appropriate for the traditional medical practitioners and the primary health care systems in their respective countries.

As of the year 2000, twenty-five countries reported having a national traditional medicine policy (WHO, 2002, 1). Critical issues in the development of traditional medicine policies are safety, efficacy, quality and rational use. Spending scarce traditional medicine funding on different forms of laboratory and clinical research presents an ethical debate when many of these drugs have demonstrated their efficacy by proving useful for generations of people. Each country must decide for themselves the appropriate guidelines for use and the ramifications those decisions will have on their ability to market traditional medicine therapies internationally. In addition to this, the balance between making herbal medicines accessible and protecting intellectual property rights has become a heated debate for policy-makers all over the world. In the midst of these conflicts, the World Health Organization has recommended that the focus of traditional medicine funding should be directed towards diseases that represent the greatest burden for poor populations, particularly malaria and HIV/AIDS (WHO, 2002, 3).

Thailand is a pioneer in the field of tradi-
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Regulation of Traditional Medicine

Although promising policies in the field of herbal medicines are beginning to emerge, the research and support necessary for the integration of traditional medicine into the primary health care system are still far from becoming a reality. Currently, Thailand is undergoing a struggle to determine the best course for regulating the use of herbal drugs and the activities of traditional medical practitioners. The Thai government has established a list of strict regulation requirements in conjunction with the World Health Organization in order to register new drugs. The requirements include the mandatory registration of a prospective herbal drug before it can be produced or imported for marketing purposes and that applicants for drug registration must hold importing drug licenses (Lawanprasert, 2002).

These regulation requirements present many obstacles for the traditional medical practitioner including the danger that he or she may not receive the credit for the valuable knowledge they possess about the drug. Also, if drugs are registered it may no longer be legal for traditional practitioners to dispense these substances to patients. The positive aspects of increasing the regulation of herbal medicines include the nec-
As has been discussed previously in this paper, Thailand’s policies in traditional medicine can serve as an important model for other countries seeking to integrate traditional medicine into their health care systems. Their successes and problem areas can be used to anticipate the ways integration may occur in other countries. Even though these obstacles have not been solved in Thailand yet, their willingness to recognize their existence and take preliminary actions to solve them are steps in the right direction.

Even in the midst of a multitude of obstacles, traditional medicine research has incredible potential for improving access to primary health care services for people living in poverty. Although there is still a lot of work to be done, Thailand has done the groundwork of establishing a successful program for ensuring safety, efficacy and quality of herbal medicines. In the Strategic Plan for Health Research in Thailand, the Thai government has identified methods of supporting traditional medicine (Thailand’s Strategic Plan for Health Research, 105):

- Support Non-Governmental Organizations in their power to negotiate for regulations to improve utilization of traditional medicine.
- Support folk doctors and Thai traditional doctors.
- Change laws to improve utilization of Thai traditional medicine.
- Encourage the Thai government in its attempts to develop a strategic plan to reform Thai traditional medicine use.

These strategies are extremely optimistic and they require a mutual respect between traditional practitioners, allopathic practitioners,
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policy-makers and public health professionals in order to become a reality (Evaluation and Planning Centre for Health Care, 24). Fortunately, efforts are currently underway in Thailand to encourage a healthy flow of information between these frequently conflicting constituencies. This type of intersectoral collaboration is the key to future development in the area of traditional medicine in the struggle for health for all.

CONCLUSION

In order to integrate traditional medicine into the health care system, the knowledge and traditional practitioners and their right to benefit from that knowledge needs to be honored. This involves fostering mutual respect and communication between traditional practitioners, allopathic practitioners, policy-makers and public health professionals. Intersectoral collaboration is the key to future development in the area of traditional medicine in the struggle for health for all. Thailand’s policies in the area of traditional medicine can serve as an important model for other countries seeking to integrate traditional medicine into their health care systems.

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Abstract

In this paper, the fundamentals of Thai traditional medicine would be discuss along with the relevance of expanding traditional medicine utilization to more Thai people in a primary health care environment. The history of herbal medicine from the Sukhothai period to today along with the current situation in Thailand as it relates to traditional medicine utilization, training and human resources will be covered. Research on traditional medicine in Thailand and the resulting herbal drugs will be enumerated along with other promising data on the use of medicinal plants and their ramifications for the developing world. Laboratory and clinical testing regulations, standards for production and cultivation and quality assurance considerations will be addressed. Finally, an examination of traditional medicine policy concerns worldwide and the process of integrating traditional medicine into the health care system in Thailand will take place. Obstacles and best practices for integration will be attended with a particular emphasis on the impact on traditional practitioners and the potential for equity of access to traditional medicine in the struggle for health for all.

Key Word

Thai Traditional Medicine Herbal Medicine Health Care System


Lawanprasert, Y. "How Regulation of Herbal Medicines was Established in Thailand," World Health Organization Power Point Presentation found at http://www.who.int/medicines/library/qsm/icdra02/ppt/Yupin_Lawanprasert


