MEDICAL PLURALISM IN GUATEMALA

By

KHAMILLE NEUMANN

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To the Faculty of Washington State University:

The members of the Committee appointed to examine the thesis of KHAMILLE NEUMANN find it satisfactory and recommend that it be accepted.

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Nancy P. McKee, Ph.D., Chair

_____
John H. Bodley, Ph.D.

_____
Clare M. Wilkinson-Weber, Ph.D.

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This thesis would not exist today if not for the continued support from my giving husband, Ryan, and my caring parents, Ron and Marie. Without my husband's undying dedication to my peace of mind, I would not have the opportunities I have today; while my parents fuel my fire for every decision I make. I owe these three people more thanks than there is room for here. I am forever in their service.

Finally, thank you, Michaela, for your lifelong devotion to adventure. May Anika have even just a twinkle of the spirit you have in your eyes.

MEDICAL PLURALISM IN GUATEMALA

Abstract

by Khamille Neumann, M.A.
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Chair: Nancy McKee

Patients in Guatemala currently have varying access to pharmacies, traditional healers (i.e., midwives, spiritual healers, shamans, and herbalists), clinics, hospitals, traveling vendors, physicians, as well as self-treatment. I found several variables that appeared to be affecting the choices of Maya to seek medical help. The three variables of cultural tradition, government policies, and economic resources seem to explain their reluctance towards choosing modern medicine. While it would be very noble to offer indigenous people more medical options, it would be extremely inappropriate to impose a complete replacement of their current hybridized medical system. I suggest several ways for positive integration of both traditional and modern medical systems.

Although there are many ethnographic accounts of Mayan botany and of Mayan medicine, there is little information as to how plants are used in women's medicine. In my research, I interviewed six Guatemalan medicine women (Mayan and Ladino midwives and herbalists) about their uses and views of herbal medicine and modern biomedicine. I have attempted here to reinforce Sheila Cosminsky's research on Mayan midwifery, while including a preliminary look at the botanical medicine used in their practices. Further research is still needed in identifying the chemical sources of the plants' medicinal properties.

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Dedication

I dedicate this thesis to the late Professor Dr. Bernard Q. Nietschmann (1941-2000) who inspired me to continue my journey in cultural studies. Dr. Nietschmann's groundbreaking work in cultural autonomy and unique research in resource conservation is still unmatched today by any other cultural researcher. May his dreams live strong in his honor.

PREFACE

I spent three years after my trip to Guatemala trying to focus my master's thesis into a concise and meaningful paper. My first attempt resulted in an "epic" of grand proportions. I thought I could solve all of Guatemala's social, political, economic, and environmental problems after having only been there for six weeks. I wanted, with best intensions, to apply my research to so many theories and problems present in Guatemala. It all seemed so clear to me: respect the Mayan heritage and all will be fine. Unfortunately, the world is not that simple. Money tends to play a major role in many of the issues Guatemala faces today. Obviously, the Maya can live relatively stable on very little money. The national government, on the other hand, needs a great deal of money to fund, foster, and support its country (or at least those who are running it). Millions and billions of dollars have led the government to wage war against its own civilians since the 1950s and 60s. That war continues today.

My field research evolved into a more focused set of questions regarding national health care programs and its relation to traditional Mayan medicine. Well enough, but these issues don't even touch the bigger environmental, social, and international problems that Guatemala faces today. Mayan families are being evicted off their ancestral lands without due process. Their homes are being burnt down and those who resist are killed on site. People ask me about Guatemala's Civil War and the 1996 Peace Accords. I say the war is not over and there is still no peace there. As long as international big businesses continue to show interest in mining and farming the fertile lands of Guatemala, the government will continue to give them what they want for the prices they offer. On one of my visits to the capital, protesters were camped out in

front of the national palace demanding peace, justice, and arable land. They had been there for some time – weeks or months, I'm not sure. They slept in tents on the concrete plaza and cooked food over the flame of an open fire. They wanted their land back but could not compete with the prices of the international companies, nor could they fight back against the national army any longer.

Is all the money in the world really worth killing innocent, helpless women and children, making them homeless, and burning all their possessions? I hope not. Apparently, I am wrong. I have looked for documentation to prove that I am wrong, that all the killing was truly over and that the stories I have heard were remnants from the past. I found an article on a web page funded by a solidarity group for Guatemala confiding that reporters have had their cameras smashed, and worse, for trying to document what they see. There is very little documentation on the atrocities and massacres that continue throughout Guatemala after the so-called peace treaty. I feared for my safety staring at or asking the wrong people too many questions. I dared not take pictures without ever asking first – unless I looked like an innocent tourist, even then, my heart palpated.

The sociopolitical strife in Guatemala is much more than I can address myself. The amount of strength it would take for one person to report on such breeches of human rights is beyond my abilities. I found it hard enough to find prior research on Mayan midwives' botanical medicine. Mayan life in Guatemala continues to survive despite all the centuries of death and injustices. The difficulty of reporting on the Mayan ways is found in their own struggle to live their lives as they wish, as they have been, the only way they know how, on their land and with their families.

CHAPTER ONE

INTRODUCTION

In the 1983 book, *Heritage of Conquest Thirty Years Later*, Sheila Cosminsky's chapter, entitled *Medical Pluralism in Mesoamerica*, outlines some characteristics of an existing pluralistic medical system in Central America. She finds that pluralized medicine "provides flexibility and fulfills different needs of the population" (167) by its availability, application, and etiology. Patients in Guatemala currently have varying access to pharmacies, traditional healers (i.e., midwives, spiritual healers, shamans, and herbalists), clinics, hospitals, traveling vendors, physicians, as well as self-treatment. Both patients and traditional healers have some type of access to both the biomedical and folk models of medicine. However, they apply these two systems to different degrees and in different ways depending on the illness, its severity, and the availability of resources. They also identify and treat illnesses from the etiologies and disease categories of both systems. In her preliminary research, Cosminsky calls the Guatemalan health system "a pluralistic complex of multiple and simultaneous usage" (Cosminsky and Scrimshaw 1980:267). This crossover of medical theory and practice expands the potential for healing and health among the Maya who comprise nearly half of Guatemala's total population of over 13 million people.

In my research, I interviewed six Guatemalan medicine women about their uses and views of herbal medicine and modern biomedicine. The six women include both Mayan and

Ladino[1] midwives and herbalists. Since her first research in 1972, Cosminsky has focused mainly on Mayan traditional midwives and their relation to both other modern physicians as well as to Mayan patients. She has accounted for the challenges, benefits, and needs of the midwives, noting their multiple disadvantages of being female, illiterate members of a low economic status ethnic group. Until 2001, none of Cosminsky's works have dealt much with the ethnobotanical aspects of Mayan medicine. She recognizes though, that there is a need for further research into the uses, preparation, and values of the Mayan medicinal plants (1977:97; 1982:219; 2001c:269-270). I have attempted here to reinforce Cosminsky's research with my own, while also including a preliminary look at the botanical medicine used in Mayan midwifery.

My inspiration and motivation for this research came from the work by medical ethnobotanist Mark Plotkin and his Amazon Conservation Team (ACT) in the Amazon rainforest of Brazil. ACT has a Shaman's Apprentice Program that works to record and document traditional indigenous medical ethnobotanical knowledge from oral transcription for use by future generations. The team has learned the healing ways of many powerful male shamans. During his initial studies, however, Plotkin was confronted with the difficulty of not having access to the knowledge held specifically by medicine women.

> In a culture where most of the houses have no walls, all illicit couplings take place in the jungle. To proposition someone, you ask them to meet you in the forest… It seemed there was no way for me to walk into the forest with any woman from the tribe, and no way for me to learn about their special plants.

[1] Ladino may be defined either as a non-indigenous person, a person of mixed Spanish and Mayan descent, or a Mayan person who does not identify with the indigenous culture. The Ladino informants were of the first two types.

> … I am convinced that there exists a wealth of ethnobotanical treatments for menstrual problems, birth control, difficult childbirth, and so on, which is simply unavailable to the male ethnobotanist. [Plotkin 2000:104-105]

Herein lies the need for a female medical anthropologist such as myself. I took the opportunity as a female anthropologist to reach some of this knowledge that Plotkin describes as inaccessible to male researchers. As a woman, I found it easy to talk to Mayan women, ask questions, and have them talk to me freely about their concerns and issues.

Mayan medical practices reflect a diverse history of tradition and adaptation. Current Mayan medical practices are actually an integration of modern and ancient medicine. Because of this, medical pluralism gives the Maya the security of biomedicine while allowing them to retain continued access to their cultural medical practices. Technology and modernization increasingly encroach upon the highland *aldeas* (villages), making traditional healers more and more interested in modern ingenuity. Some Mayan practitioners still take their patients' vital signs with the use of sight, sound, and touch. Simple, yet effective, these methods are rarely inaccurate for them. However, today some traditional practitioners also incorporate the use of select technologies into their practice such as a mercury thermometer and a sphygmomanometer with a stethoscope.

> Pluralistic medicine is manifested not only in the coexistence of several traditions, each with their own specialists, ideology and practices, which are used by the client population, but also in the integration of elements from each of these traditions by the practitioners (except for the physician). [Cosminsky 1983:165-166; Cosminsky and Scrimshaw 1980:275]

Even though some Mayan healers have adopted certain aspects of modern medicine, many Mayan healers persistently prefer to use the ancient healing traditions (author's observations). While the influence of Western culture is evident in the current practices of traditional Mayan practitioners, the Maya also continue to practice ancient methods of healing.

Cosminsky presents both a positive and a negative view of the integration of modern medicine into the traditional practices of the Maya, both of which she validates. On one hand, she recognizes the necessity for the Maya to have access to modern medical practices, such as nutritional and fertility therapies. On the other hand, she fears the loss of a traditional practice that has served the Maya for many years. "[M]edicalization may result in increased knowledge for midwives and mothers… [or it] may result in midwives losing knowledge, autonomy, self-esteem, respect and power" (2001b:350). Overall, Cosminsky argues in favor of keeping the Mayan medical tradition in use while introducing culturally appropriate aspects of biomedicine. My research explores how a pluralized national medical system can overcome any possible negative effects of joining the traditional with the modern by enhancing the potentially positive outcomes.

Encouragement of pluralized medicine can be a powerful force in improving health programs and services in Guatemala. The combination of Mayan medicine and biomedicine offers greater resources for Guatemalans, particularly for the Maya who have limited access to and financial means for modern Western medicine. Many authors agree that "midwives are and will continue to be a key element in whatever effort is undertaken to reduce maternal morbidity and mortality in Guatemala. [Therefore,] models of health care for rural women have to combine traditional and formal medical resources" (Acevedo and Hurtado 1997:321).

> In the 1980s, the Guatemalan Ministry of Health, like other health ministries in Central America, adopted the model recommended by the World Health Organization (WHO), which recognizes the importance of traditional health care providers and of incorporating them into government health services. [Hurtado and Sáenz 2001:217; see also Acevedo and Hurtado 1997:274-275]

Modern medical practices taught at training programs "must be fitted into already existing systems of knowledge" rather than replace traditional practices (Berry 2006:1968). Delores Acevedo and Elena Hurtado have already "found that women combine both [traditional and formal] types of providers because they perceive them as providing different types of services" (1997:302). Cosminsky and Scrimshaw found that one midwife "has incorporated or combined various aspects of modern medicine that she has learned with traditional practices," making her "The most active specialist on the finca [with] the most medical roles" (1980:270).

John Hawkins and Walter Adams identify three basic requirements for the Maya to benefit substantially enough from an integration of these two very different medical systems . In order to benefit a population, an integrated system must combine "the best of both systems" into one that is "affordable, accessible, and culturally acceptable" (2007:224). The Maya are not only burdened with being the poorest population in Guatemala, but as exiles in their own land, they live in the most remote locations. For a medical system to be successful in Guatemala, it must be able to reach those who need it most financially, geographically, and culturally. My research revealed these and other factors in making health care accessible to the Maya.

This project investigated Mayan women's beliefs and perceptions of medical treatment options. The results show an overall persistent struggle of the Maya for freedom and recognition

in an increasingly Westernized society. Today, Mayan women wear the traditional *huipil*, a hand-woven embroidered blouse, and speak their native language every day in protest against the threat of losing their traditional culture. All of my informants revealed a similar reluctance of adopting new medical practices and trepidation about the future of their own traditional medical practices. For example,

> Some women expressed anxiety about hospital deliveries because they said they could not keep their head and shoulders covered [from *aire* (cold air)] the way they thought necessary and that the hospital food was not compatible with [traditional] dietary restrictions. [Cosminsky 1982:219]

Because of their constant battle for cultural and political autonomy, the Maya have retained a substantial amount of their traditional healing methods, including herbal remedies in the form of *oración* (prayer) combined with teas, tinctures, oils, baths, and poultices. The survival of this traditional knowledge throughout history has been a very strong force in the preservation of the traditional Mayan culture.

TRADITIONAL MAYAN MEDICINE

One defining characteristic of traditional knowledge is that it is built from centuries of knowledge from elders for generations after generations. Elders' knowledge is transmitted to younger generations, thereby ensuring the perpetuation of a culture over time. Cultural transmission is the mechanism for the process of cultural evolution in which humans play an active role in every culture. While genes are the packages of genetically heritable information, memes are the packages of culturally heritable information (Richerson and Boyd 2005). Without

cultural transmission, culture and cultural knowledge would not succeed through generations over time. L. L. Cavalli-Sforza and M. W. Feldman (1981) offer a model for the theory of cultural transmission based on the evolutionary process of cultural selection. The authors identify three modes of cultural transmission: vertical from parent to child, horizontal between two people of the same generation, and oblique from an adult non-parent to a child. Weaving is one common example of a traditional knowledge that has been vertically transmitted from mother to daughter for centuries. Similarly, all of my informants claimed to learn their herbal knowledge from their fathers, mothers, or grandmothers as their mothers did a generation before them. They inherited their traditional knowledge as young children through vertical transmission from one of their parents.

An essential component of Mayan medicine is the theory of humors. Although this concept of health and healing, known as the Hippocratic doctrine, originated in Greece and Persia (Orellana 1987:164; Hernández and Foster 2001:19-20), the hot-cold theory, or the principle of opposites, was also practiced in ancient Middle America. Whether this practice was an independent invention or whether it was learned through cultural contact is inconclusive. My fieldwork encountered the hot-cold medical concept briefly, but failed to reveal any specifics of this practiced knowledge. Previous research, however, shows that this practice was and still is of important use in Mayan medicine (Cosminsky 1977:79; 1982:210-211, 1983:166-167, 2001c:256-257; Goldwater 1983:45-46).

> The nature of an illness, the variety of organs involved and the degree of the disequilibrium produced will determine the hot-cold category of the illness. The actual hot-cold phenomenon cannot exist other than in relationship to a

> process in the body or the composition of a plant, food or mineral. It echoes an understanding of the flows of energy inherent in all biological rhythms, and signifies the tendency of action or reaction to the particular substance, whether food or medicine. [Goldwater 1983:45]

Some of my informants referenced balances within the body that can indicate an individual's health status, meaning that an individual can become ill when something in the body is off balance. The very existence of this belief in humors attests to the survival of an ancient practice. Another ancient practice is the use of needles, as used in Chinese acupuncture, by Yucatan Mayan traditional healers (García et al 1999:109). It is possible that cultural drift could have hosted this type of knowledge transfer. Seafarers have navigated the open seas for thousands of years. On the other hand, if these practices are a result of independent invention, it would stand as evidence that cultural transmission has been active for centuries. The question as to whether the Maya adopted these practices from the Greek and Chinese or whether they have survived from ancient times is indeed a question for further research.

Although the Maya use several plants known commonly by Westerners, there is a long history of their use among the Maya. Today's use of Mayan medical healing practices in the southern highlands of Guatemala is clearly an integration of ancient Mayan healing arts, European folk medicine, and modern Western science. The syncretism of these three practices makes it difficult to distinguish what practices came from when and where. Independent invention has never been an easy question for anthropologists to answer in regards to ancient cultures and foreign influences. However, the beautiful result is a medical system that offers more to patients and practitioners than any single system can alone.

GENDER

An important consideration of the traditional Mayan culture is the social role of the *comadrona* (midwife) within the community. Beyond actually healing people, the Mayan midwife is also a friend, relative, neighbor, consultant, leader, and authority in medicine and religion among many other important roles viewed by community members. "[S]he can be both an agent of sociocultural change and of continuity and resistance" (Cosminsky 2001b:348); she can "also act as an agent of social control, reinforcing the values of gender, family, and community, as well as passing on ethnomedical knowledge and principles" (Cosminsky 2001c:254). In this capacity, midwives could be excellent resources for promoting family planning techniques (Cosminsky 1977:100). Additionally, the connection between any traditional healer and the spiritual realm is highly valued within the Mayan culture.

> The midwife plays a role in social control and in maintaining the traditional system. She is a repository of traditional practices and beliefs, some of which she imparts to the mother in the form of advice and dietary and behavioral restrictions, and others which are incorporated into rituals and backed by supernatural sanctions. [Cosminsky 1982:226]

A midwife can be "an arbiter of moral values and an agent of social control… reinforcing the norms of the society including the role of motherhood and the value placed on children" (Cosminsky 2001c:267). The vast differences and subtle similarities between Western and Mayan medicine are complex and difficult for outsiders to fully understand. "Midwives who are supernaturally selected and instructed are still preferred to the few who have recently learned

their art from public health nurses" (Paul 1978:148). My research of Guatemalan Mayan women's medicinal plants reveals how these women embrace their culture to create a distinct identity.

Traditional knowledge of medicinal plants is held among Mayan men and women alike of all ages, classes, and locations in Guatemala. Male midwives are not unheard of, but are less common. It appeared to me that the men and women have equal levels of herbal knowledge. However, their knowledge seemed to differ in specific ways. The men seemed to have more understanding of spiritual healing, tending to show greater experience with supernatural medicine. I attributed this difference to the fact that Mayan women do not ingest hallucinatory substances, including alcohol or tobacco. This seems to be the realm of male specialty only. Similarly, female healers had a stronger presence in women's medicine, accounting for the greater number of female midwives. I attributed this difference to the existence of *machismo* (masculinity) within the culture. To Mayan women, a female midwife knows more about pregnancy and childbirth than a male obstetrician. Women know women's problems better, at least "female patients are more likely to trust them, and thus they can be more effective than men" (Hawkins and Adams 2007:223). Even in the face of changing government laws, restrictions, and policies, the Maya show persistent resistance to losing their cultural identity by conserving important traditions.

METHODS

I conducted my study primarily in the southern highlands of Guatemala during the summer of 2006. I made prior contact with Bertha Sandovál, the director of the now inactive

non-profit Christian organization known as Servicios Ecuménicos de Formación Cristiana en Centroamérica (SEFCA, Ecumenical Services of the Christian Formation in Central America). Once there, Bertha introduced me to six Mayan female healers, all of whom became the informants who provided the data for my research project. All of her contacts were participants in some of the clinical health trainings that her organization sponsored in the past. I interviewed two *curanderas* (traditional healers) at a non-profit clinic in a Guatemala City slum, one *herbalista* (herbalist) in her middle-class home in the capital city, two *comadronas* (midwives) in their rural home clinics of Chichicastenango and Santa María Cauqué, and another *herbalista* in

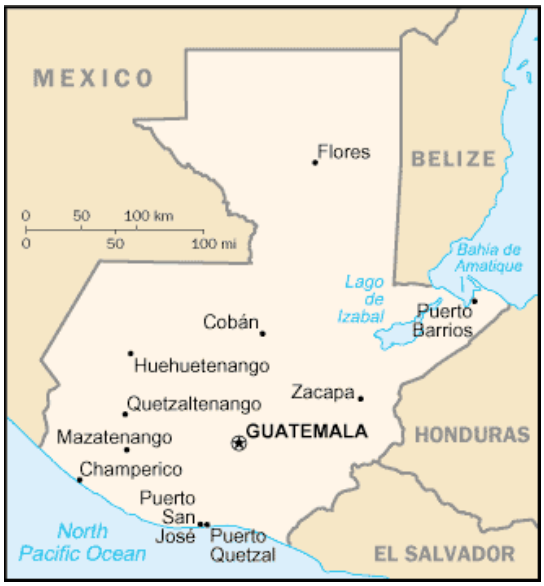


Figure 1. Map of Guatemala.

her home in the *aldea* San José Pacul, the nearby *pueblo* (town) of Santiago Sacatepéquez (Figure 1). Each of the practitioners claimed to have an extensive knowledge of herbal medicine and of successfully treating various illnesses. In addition, each of them successfully grew various medicinal plants for treating patients, themselves, and their family members. These six

Guatemalan women's knowledge of medicinal plants demonstrates a superior expertise of their medical practice as well as an undivided devotion to their cultural tradition.

The primary methods I used to investigate Guatemalan women's use of traditional Mayan medicine for the purpose of this study were semi-structured and open-ended interviews (see appendix). The interviews began with demographic information, including family size, income, and education levels. Following that, the interviews covered information such as how and where the informants received their botanical knowledge and a small sampling of what that knowledge included. Being a female researcher, I chose to inquire specifically about remedies for menstrual pain and discomfort. While there are a few cornerstone publications on the anthropology of menstruation and of midwifery among the Maya (Acevedo and Hurtado 1997; Berry 2006; Cosminsky 1977, 1982, 1983, 2001a, 2001b, 2001c; Cosminsky and Scrimshaw 1980; Hopkinson 1991; Paul 1978; Hurtado and Sáenz 2001; Wilson 2007) and numerous comprehensive texts of Mayan ethnobotany (Arvigo and Balick 1998; de MacVean 2006; Orellana 1987; Roys 1932), there is currently no study of Mayan ethnobotany of women's medicine. I had originally hoped to fill this gap in scholarly research, but my findings took me in another direction and I found my research to be more informative in the study of pluralized medicine. However, I am able to include a short botanical description of four selected plants in this paper.

With permission from the informants, the interviews were recorded with audiocassettes and a minimal number of still digital photographs. I also took written notes for my own records. Although Spanish was not the first language learned by three of the six informants, I conducted all of the interviews in Spanish without the use of a translator. Translations of the interview

questions are included in the appendix. I gave cash payments in return for each of the informants' time. I also gladly gave my physical labor (e.g., weeding a crop of radishes) and purchases in kind (supplies and gifts) when appropriate as a gesture of respect and gratitude. None of the informants' true identities will be used in this or future reports. Instead, pseudonyms will be used to protect their privacy.

CHAPTER TWO

MODERN MAYA

The Mayan culture today is a hybrid of ancient tradition and modern convenience. There is a broad range of this hybridized culture which is practiced by and reflected in each person's life differently. Mayan medicine is today also a hybrid of modern and traditional practices. Before colonization, religion and medicine were one and the same for the Maya (Cosminsky 1983:160). Some of this philosophy is still evident in traditional healers' practices today. However, there have been drastic changes from the religion and medicine that was once used to what is used now. "Much of what has been regarded as 'traditional' medicine today is the amalgam and syncretism of this earlier pluralism of indigenous and sixteenth-century Spanish medicine and religion" (Cosminsky 1983:160-161). The effects of colonization on the Mayan culture are irreversible. Whatever remains, whatever has held over throughout history, is all that is left of their ancient beliefs and practices.

In order to understand the value of traditional medicine among the Maya, one must first understand the culture to which they belong to today. Although the Maya predominantly continue to practice traditional ways of living, there is a great integration of modern conveniences from Western lifestyles. Indeed it would be impossible to measure the influence of a culture's historical content, as many of the world's cultures today are hybrids from neighboring groups anyway. However, perhaps it is possible, to an extent, to gauge how much a person combines modern technology with historically traditional practices. Some indicators of this hybridization are language, transportation, economics, education, employment, communication,

and dress. The degree to which one's lifestyle has been modernized might be an indicator as to the degree to which a traditional culture and its doctrine may have either adapted or subsided. In Guatemala, a Mayan person who has become "Ladino-ized" has replaced traditional ways with modern ones, effectively becoming Westernized.

Traditional or modern, a typical rural Mayan homestead is today often composed of a cement or dirt floor and tin roofing (Figure 2). A historically traditional Mayan lifestyle might include illiteracy, the inability to speak Spanish, walking to markets, no formal education, hand woven clothes, or a formidable ability to grow and produce crops and livestock. A modern Mayan lifestyle could have all the same characteristics of a historically traditional lifestyle

Figure 2. Typical rural Mayan homestead in the southern highlands of Guatemala.

while also including possibly the use of cell phones, cars, computers, monetary purchases, manufactured clothes, the ability to speak and/or read and write Spanish, and the use of any other modern technology or knowledge. Each of my informants fits into this continuum of technology somewhere between traditional and modern. Some of them have cars, cell phones, and manufactured clothes. Others wore only hand-woven clothes, walked to markets, and could not read or write. Today's Mayan culture is a tightly woven tapestry of everything that has once been contrasted by everything that is coming to be.

The spread of urbanization and modernization is clearly visible along major highways in the highlands of Guatemala, especially between Guatemala City and Quetzaltenango. Young women increasingly choose to wear clothing stylized by Western culture. Some Maya even achieve computer literacy soon after achieving Spanish literacy. Areas of entrepreneurship in the informal sector include transportation, food vending, and local market sales (Figure 3). The

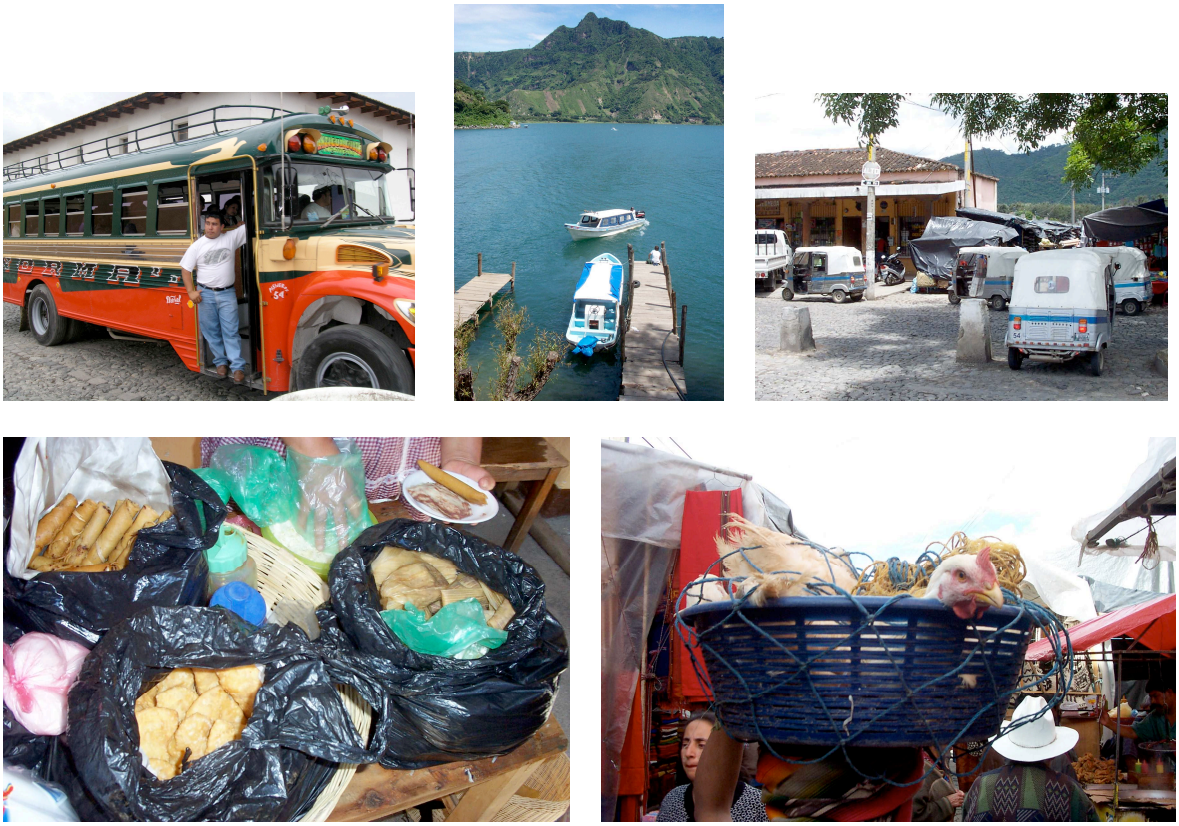


Figure 3. (Clockwise from top left) Bus, boat, and taxi transportations, market sales, and food vending.

Maya do not hesitate to express their desires to travel to the United States, to become financially successful, or to learn English despite never having had formal Spanish training. We cannot ignore these influences of or desires for globalization, yet we cannot ignore the persistence of the Mayan culture to withstand centuries of change and devolution. In spite of any challenges, the treasures of the Mayan culture will never disappear forever at the heels of modernization.

POLITICAL CLIMATE

There is no easy way to describe the current political climate for the Maya in Guatemala. The Civil War that was supposed to end in 1986, followed by the Peace Accords in 1996, continues to torment the *campesinos* (farmers) and rural Maya into the 21st century. There is much controversy as to when the war began and if it has really ended. The United States CIA organized the coup d'état of Guatemala's democratically-elected President Jacobo Arbenz Guzmán in 1954. The coup ended Guatemala's "Ten Years of Spring" stopping all plans for redistributing land to the Maya. His plans for land reform were viewed as Communist and countered the capitalistic interests of international mining and agricultural companies, particularly and especially the U.S.-based United Fruit Company, who is considered a major player in the coup. Since the coup, Guatemala has been ruled primarily by military dictators until 1986 with the democratic election of civilian Marco Vinicio Cerezo Arévalo. (See Handy 1984; Helms 1982; Lovell 2000; and Stanfield 1991.)

The pressure from international companies prospecting land has been pushing the Guatemalan government into an aggressive relation with the rural Maya. The potential profits from land sales to the companies are far greater than the amount of taxes the government receives from the peasant farmers. Without due process, the farmers are ordered to vacate their land, face forced eviction, or even death. The families become homeless, jobless, and are often separated if the children are able to stay with relatives while the parents look for work elsewhere. The payoff, according to the companies, is that the market will bring more jobs and more money into the country. Unfortunately, the seasonal jobs they offer do not pay well, while requiring long

hours and relocation away from their families. Additionally, the companies' exports are nearly tax-free, generating very little revenue for the national government. The situation brings a large payoff in real estate sales, but in the long-run, the loss for Guatemala is much greater. (See Handy 1984; Lovell 2000; Manz 1995; Menchú 1984.)

In response to these drastic measures, organized insurgent armies have been battling to regain their rights to freedom and land. The Guatemalan government (Figure 4) has been fighting these guerrillas with counter-insurgent troops since the last coup. Civilians are constantly

Figure 4. One of Guatemala's military personnel.

terrorized by both sides of the war to fight for or against either one side or the other. The national army has been known to murder, torture, execute, interrogate, and exile anyone who is suspected of aiding the insurgents. Deaths and "disappearances" have numbered in the hundreds of thousands since the 1980s. For more detailed accounts, you are obliged to read Rigoberta Menchú's biography (1984) and W. Goerge Lovell's reflections (2000).

RELIGION

In almost every culture, religion explains the creation and destruction of life. Religion, for the Maya, is inseparable from medicine, encompassing every aspect of their everyday lives.

The Maya believe that all plants hold spiritual energies, and it is these particular energies in medicinal plants that initiate the healing process for a sick person. Healers pay homage and give thanks to the spiritual guardians of the plants, the life-force, and the land when collecting and using medicinal plants. They believe that these practices give the plants greater medicinal and healing powers; and without these practices, the plants' healing properties may not work at all.

When the Spaniards forced the Maya to refrain from worshiping ancestral spirits during colonial domination, the Maya did not lose their faith. Instead, they incorporated the identities of the Western saints into the symbology of their own gods and spirits. Mayan Catholicism enabled a syncretized integration of select aspects of the new religion by incorporating it with compatible parts of the traditional practices from their ancient beliefs.

> Religious beliefs, which were closely related to medicine in pre-Hispanic times, proved to be very difficult to eradicate, and much of the ancient illness etiology and curing practices apparently continues to exist among today's Indian groups. Change did occur during the colonial period, however, and much of the aboriginal medical system was lost. [Orellana 1987:23]

Although many Guatemalan Maya commonly and proudly practice this mixing of spiritualities, they still pay tribute to their ancestral identities by practicing their religion in a distinctively Mayan manner. It is common for a Mayan Catholic to have an altar in their home filled with candles, incense, herbs, flowers, tobacco, photos, food, drink, and other pious offerings. They offer these goods along with *oración* (prayer) to both the new saints and old spirits, thereby continuing to respect their own ancient cultural deities while simultaneously recognizing the introduced new ones. The traditional Mayan customs are still observed today for many religious

events. On religious holidays, they only wear their traditional hand-woven garments that display only the most ornate embroideries. Between the ancient Mayan holidays, the incorporated Catholic holidays, and the Guatemalan national holidays, the Guatemalans seem to celebrate a different holiday every week. Parades and festivals constantly fill the streets throughout the Guatemalan cities, giving the country a feeling of ongoing elation – even if it's only a façade.

One example of the Mayan incorporation of a Christian saint is the spirit/saint of Maximón/San Simón. The sacred entity of this image remains the same when the Maya pray to it even though the image itself has numerous and various identities. In ancient times, objects of prayer for Maximón were a collection of sacred items wrapped in a bundle of cloth or leaves (see Pieper 2002). With obvious Western influence, Maximón is today portrayed by a wood carving of a man sitting in a chair with a staff in one hand, a satchel of money in the other, and a cigar in his mouth. His clothing now almost always includes a Western hat and either Western or traditional garb. He is often placed on an altar where patrons will leave offerings of colored candles, incense, flowers, alcohol, money, cigarettes, and food in hopes for a rewarding, luxurious, wealthy, leisurely, or healthy future. His exact location is a community secret. When I disembarked from a ferry in Santiago Atitlán, children rushed towards me in hopes that I would pay them to escort me to his secret holding place. Whether their current religious and medical practices are based on tradition or an incorporation of different practices, the Maya today continue to pray to their ancestral saints and religious figures. This same ambiguity is reflected in the Maya's syncretized medical practices.

The abundance of churches in Guatemala gave me one opportunity to see a modern practice of the hybridized Mayan Catholic religion. While strolling through the outdoor market

in front of a church during my visit to one village, I realized that everyone was wearing very formal clothes. The women had their hair braided and pinned up with flowers and the men all wore nice hats and suits. Soon a procession of young girls dressed in ornate white lace gowns each holding a bouquet of flowers proceeded from the church entrance out to the courtyard to greet their families. After a later discussion with some colleagues, I concluded that this was a group celebration of *quinciñera* (fifteenth birthday) for all the girls in the village that were coming-of-age that year. Once the young girls regrouped with their families, they all walked down the streets and dispersed into their homes. As the slowest walkers and dressed only in the finest embroidered garments and shawls in the whole village, the elders were the first to leave. They were also the last to be seen walking down the road after everyone else passed them by in a whirlwind.

Some Mayan customs may have a more direct tie to their ancient culture than to modern Catholicism. Upon visiting another village early one morning, I witnessed a very large group of almost 80 people walking down the road. My host explained to me that a mother and child in this village had died unexpectedly. When there is a death in a village, it is like a death in the family for everyone. All the members of the entire village arrive early in the morning at the home of the grieving family for coffee on the day of the funeral. It is expected that the grieving family provide enough coffee for the entire village on that morning, just as it is also expected that everyone in the village make a contribution towards the funeral fees, even though the family never actually asks for it. After coffee, they all walk to the village cemetery to attend the burial together. Through this ritual, members of the grieving family become family members of every family in the village and henceforth receive appropriate privileges accordingly.

A memorable experience I had at a week-long seminar on phytomedicine (discussed further in the next section) consisted of a conversation about death and dying. One night the seminar attendees were all invited to participate in a social event after dinner. We all sat in groups of five, and were asked to discuss our own experiences and feelings about death. I sat and listened attentively to the people in my group but chose not to participate as my country has ingrained within me the notion of a somber taboo for that particular subject. After about fifteen minutes, each group was called on to explain what we agreed to be the meaning(s) of death and dying by sharing some of our own experiences. The facilitator finally asked me, as an American, what my thoughts were on it since I hadn't said much up until that point. I told her it was something that we never discuss in my country and that I felt very uncomfortable participating because I had such a hard time understanding, even accepting, the idea of death. She responded, saying that in Central America, *El Día de Los Muertos* (The Day of the Dead) is not anything like our almost comic version we call Halloween. On that day, they celebrate the dead in remembrance, honor their ancestors, and give offerings to the spirits. The holiday provides an opportunity to educate their children about the afterlife, diminishing their fear of the unknown and expanding their respect for the past.

I visited the archeological site of Zaculeu in the northern highlands just outside of Huehuetenango coincidentally on the day a Mayan ceremony was in progress. It was during the week of the Mayan New Year and I had heard it was an eventful celebration in remote parts of the country. I had no idea, however, that I would be privy to witness the custom firsthand. When I arrived at the ancient pyramid, four groups of Maya of all ages stood around a huge bonfire beneath the ascending stairs (Figure 5). Each of the four groups wore a representative color –

Figure 5. Mayan New Year ceremony.

white, black, red, and yellow. Based on their styles of clothing, it is my understanding that the four groups represented the four cardinal directions – north, south, east, and west. A ceremonial priest for each group stood under their correspondingly colored archway with a vase of flowers of their color at their feet and a priestess on each side. Small signs with Mayan hieroglyphs representing each month of the Mayan calendar lined the circle of people around the bonfire. While I was there, I saw a dance with costumes and masks and heard several songs played with a wooden xylophone. The amount of planning and involvement for this ceremonial ritual shows that it was not taken lightly.

The examples described above illustrate several ways in which the Maya practice their religious traditions. Some of their practices are relatively new, some are ancient traditions. From researching the Mayan culture, it became very obvious that their religion is tied intimately to their medicine. The two elements are almost symbiotic. This culture could not have one without the other. A traditional healer must know the ways of spiritual and physical healing. An ill person in the Mayan culture can only be healed when he submits himself to the powers of the gods. The gods control the powers of illness and health. Respect and devotion to the gods will

allow a medicine to work; and without proper prayer and ritual, an ill person may never be allowed to heal.

MEDICINE

Guatemala's national health system is governed by the Ministry of Public Health (*Ministerio de Salud Pública y Asistencia Social*). The services are offered at four different levels throughout the country. National facilities service specialized hospitals, regional facilities offer local hospitals, municipal facilities include either a health center (*Centro de Salud*) and/or a smaller health post (*Puesto de Salud*), and hamlet services provide health posts or sometimes only health promoters (*promotores de salud*). Service hours in rural areas are often irregular and unreliable (Berry 2006:1960). Medical supplies are limited and subject to availability from the national government. There are on average 9 doctors, 7 hospital beds, and 41 nurses and midwives per 10,000 people (WHO 2009).[2] Treatments are free but primarily consist of preventative medicines (i.e., vaccines) or antibiotics. (See also Hopkinson 1991; Jones 2007.)

The Guatemalan government implemented several programs within the last century intending to lower mother and infant mortality rates by regulating and controlling traditional Mayan medical practices. In the efforts to restrict ongoing practices of Mayan medicine, the Guatemalan Ministry of Health enforced national requirements for traditional practitioners to receive professional licensing beginning in 1935 and formal medical training in 1955 (Acevedo and Hurtado 1997:275-276; Carey 2006:46). New laws mandated that all medical practitioners, professional and traditional, be licensed by the national government.

[2] Statistics vary among sources. Some statistics may not accurately reflect rural populations.

> Many of the local midwives are ritual as well as obstetrical specialists. Training is usually through apprenticeship and experience, although many midwives have also taken formal midwifery training courses… offered by the government or various nongovernmental organizations so that the midwife may receive her license to practice, a legal requirement in Guatemala. [Cosminsky 2001c:261]

Licensing procedures require regular training in order to keep licenses updated. The training classes, however, are not normally taught in any Mayan languages and are usually too far away to make it financially possible for many rural midwives to attend most of them.

In addition to formal medical training and licensure, various other strategies have been successfully employed to integrate biomedicine with traditional practices in Guatemala. The governmentally mandated medical training programs contributed to the professional repertoire of indigenous healers as demonstrated by the increase in use of vitamin, antibiotic, and oxytocin injections (Cosminsky 1983:166, 2001a:193-194). As pharmaceutical medications increased in availability, the Mayan use of them also increased. The trend for pharmacists to be trained in symptomology began during colonization (Hernández and Foster 2001), and today, Guatemalan pharmacies provide a variety of medications without the need for prescriptions. Additionally, the clinic that two of my informants worked at in an inner-city slum offered both pharmaceutical and botanical remedies. The inevitable incorporation of Western medicine into Mayan culture since the Spanish invasion illustrates the need for successful integration of traditional and biomedical practices.

Conversely, it has been much harder to integrate traditional medicine into modern medicine. There has been a constant negation towards traditional medicine by the Guatemalan

government. Traditional healers have been forbidden to practice their medicine for fear that they will make a patient more ill by suggesting inefficacious or harmful treatments.

> Training programs have tended to focus on hygiene and asepsis, especially with respect to hand washing and cutting and dressing the [umbilical] cord, as well as identification of risk factors and complications indicating referral to a clinic or hospital. The midwives' own ethnomedical knowledge and practices are usually not included, and if they are, they are evaluated negatively. Many of their standard practices, such as massage, external version of the fetus, administration of herbs, vertical delivery position, cauterization of the umbilical cord, the postpartum use of an abdominal binder, and the use of the sweat bath have been criticized and condemned by many biomedical personnel and programs. [Cosminsky 2001a:202-203]

On the other hand, some community clinics are trying to work closer with traditional midwives to ensure that patients are being referred to hospitals when needed. In addition, some organizations are hosting more training seminars that discuss the use of traditional medicine. These seminars focus on teaching and sharing traditional knowledge rather than discrediting and condemning it (see discussion of ASECSA below).

Rosita Arvigo, author and apprentice of Mayan medicine, taught the one-week training seminar on phytomedicine in Spanish which I attended (as mentioned in the previous section) at a retreat atop a mountain outside Guatemala City. There were nearly forty students, male and female, ranging in age from seventeen to seventy. The majority of the students spoke Spanish as a second, third, or even fourth language, but it seemed that almost all of them already knew the

lessons that she taught. Most of the students were practicing traditional healers. The group included herbalists, midwives, and spiritual healers, among others. They came from all over Guatemala and from all different Mayan ethnic groups. Their differentiations were evident in their distinguishable dress and languages. Remarkably, possibly the eldest of students wore a traditional *huipil* with a woven skirt and sash and did not wear any shoes at all, nor did she speak a word of Spanish – maybe out of spite.

Rosita integrated numerous stories about her Mayan mentor and her love for medicinal plants into her course material. She reviewed several of the most beneficial local plants and their uses and dedicated one whole day to demonstrate how to make tinctures, poultices, and syrups (Figure 6). She granted me a short moment to introduce myself to her during one of our breaks, which she received quite professionally. I explained to her what brought me to Guatemala and to her seminar in a way that did not make her think I was looking for a mentor myself. She encouraged me to continue my work, but showed minimal interest, most likely distracted by her own work. The seminar ended the last day with a morning prayer outside the classroom led by one of the female elders, Teresa (who later permitted me to interview her). She began the

Figure 6. (Left) Rosita mixing a tincture in class.

Figure 7. (Right) Ceremony on the last day of class.

ceremony by laying down spiritual offerings in the four cardinal directions within a circle made of *copal* resin, colored candles, chocolates, and rose petals (Figure 7). We prayed as a group to each cardinal direction while holding sprigs of rosemary and basil in our hands. Afterwards, we all kissed the ground and thanked each person individually, gathered our personal items, and then descended the mountain.

The retreat location was also home to a Mayan women's collective that produces and sells artisan foods and cosmetics on site and in local markets. The name of the collective, *Chikach*, meaning "basket" in K'iché, refers to the baskets that the women make for their daily use of carrying and bringing their products to and from the markets. Their products include marmalades, jellies, pickled vegetables, soaps, shampoos, pomades, and tinctures. The women make their goods from organically cultivated medicinal plants and do not use any artificial colors or fragrances. The collective proudly represents itself with a strong creative center of production and development in a rural area.

At the seminar, an employee of the Asociación de Servicios Comunitarios de Salud (ASECSA, Association of Community Health Services) invited me to visit the organization's

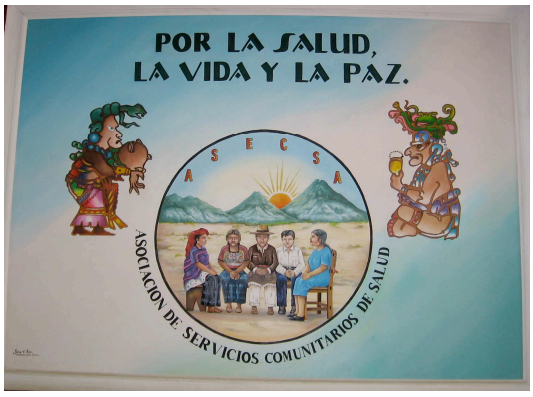


Figure 8. ASECSA's official logo.

facility. ASECSA (Figure 8) is a non-governmental, non-profit civilian organization in Guatemala whose goal has three strategies. To improve health care in Guatemala, ASECSA offers health training, medicine, and administrative support for individuals and families in remote and indigenous communities throughout the nation (ASECSA 2006). The association is represented by four main offices distributed in each of the four cardinal directions and numerous sub-chapters established in more remote locations. ASECSA offers public medical training programs led by indigenous healers and taught in numerous native Mayan languages. While government programs are characteristic of an unreciprocated form of teaching, ASECSA has courses designed to integrate traditional and biomedical healing components.

> [Government-sponsored] workshops reinforced the dominant paradigm of Ladino superiority. Even though many midwives had been practicing for years by the time they attended a course, heuristic exchanges and reciprocal teachings were rare; Ladinos remained ignorant of Mayan customs, ethnomedicine, and epistemologies except to denigrate them. [Carey 2006:46]

ASECSA training courses do not aim to devalue traditional practices. Rather the exchange of information is a primary component of these training courses. The unique success of ASECSA programs is evident in its continual growth and expansion of services and outreach. The organization not only promotes traditional Mayan medicine, it even manufactures herbal remedies in various forms such as salves, syrups, tinctures, and shampoos for sale in local *botánicas* (herbal medicine stores). In addition, they promote equal opportunity to the access of health care by providing information, support, and supplies for emergency medical services to rural and poor communities throughout Guatemala. (See also Hopkinson 1991.)

Upon my arrival to the southern regional ASECSA office, my host gave me a tour of the facility. The main building consisted of administration offices, a library, and numerous classrooms adjacent to a large courtyard. The organization appeared to be doing very well, working on expanding into a warehouse across the street. This new building was in the process of being renovated into a production house for medicinal products to sell throughout Guatemala. The warehouse was divided into several rooms, each purposefully designated to a step in the complex process of drying, refining, mixing, and packaging fresh herbs from the garden behind the building. My host explained that everything had to be sterile at all times and was currently in the process of a routine sterilization, hence many rooms stood vacant at the time of my visit.

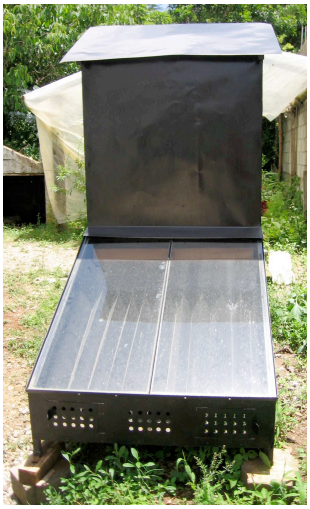
Behind the building, the large, somewhat overgrown, garden had clearly been established many years ago. Labels with both Spanish and Latin names identified row after row of hundreds of different kinds of "mother plants" and trees. The mother plants were used for identification, research and education, and for reproducing more plants in the small greenhouse at the front of the garden. The greenhouse was about the size of a one-car garage, had no door at the entrance, and consisted of a cinderblock foundation with a dirt floor. The walls and roof were constructed from plastic attached to a minimal wood frame (Figure 9, left). The plastic did not extend completely down to the cinderblock foundation, allowing for maximum ventilation required in the hot tropical climate. Since there were no shelves in the greenhouse, all the potted plants sat in rows on the dirt floor.

Next to the greenhouse was a drying house built of wood no larger than ten square feet (Figure 9, right). Large screen drawers on both sides of the entrance stacked clippings from different plants, each at a different stage in the drying process. Finally, my host showed me the

newest addition to the garden, a solar drying rack (Figure 10). An enclosed shelving unit housed a tall stack of drying screens. Attached to the back, at the base of the shelving unit, sat a small

Figure 9. (Top) Inside ASECSA's greenhouse (left) and drying room (right).

Figure 10. (Bottom) Drying shelves (left) in front of the solar box (right).



box. Visible through a glass covering, shiny metallic surfaces inside the box reflected solar heat up and into the adjacent shelving unit. My host explained that this type of drying house was much more efficient, but also much more expensive to buy.

It appeared that ASECSA had several means for preserving, disseminating, and expanding traditional knowledge of botanical medicine. Its training classes offer multilingual instruction for Maya from all parts of Guatemala. The library, although not large, was very impressive containing journals, reference books, videos, maps, and several other types of educational tools. The garden and greenhouse area was perfect for keeping increasing amounts of live medicinal plants in a similar way to that of an herbarium. Most importantly, ASECSA serves the poor and disadvantaged, providing health resources to the Maya that cannot otherwise acquire it.

CHAPTER THREE

KNOWLEDGE AND PRACTICE

Mayan midwives in Guatemala do not usually choose their practice. Instead their practice chooses them. Some midwives are chosen at birth, at which time the attending midwife would recognize deciding characteristics or signs that the baby will become a midwife as an adult. Others experience extremely painful or tormenting illnesses, which other midwives or shamans tell them, they will not overcome until they begin their practice as a midwife. A woman can also have symbolic dreams or find symbolic objects in her life that are interpreted as divine signs of the "calling" to become a midwife (Cosminsky 2001a:182, 2001b:351, 2001c:261, 1982:207; Paul 1978:129). Women are advised by other midwives or shamans that if they do not answer this calling, they will suffer great illness or other terrible loss for the rest of their lives. In this manner, midwives are said to be close to the divine spirits and are therefore indebted to their service.

Mayan midwives use several traditional techniques for prenatal, delivery, and postpartum treatments. Arvigo teaches Mayan massage which is used for increasing blood flow and reducing swelling in various parts of the body. Massage is also used to perform external version of the fetus when it is breached. The midwife can administer herbal teas, tinctures, poultices, or baths before, during, or after the delivery. Traditionally, the woman delivers her child while either standing or sitting in a vertical position. Techniques for treating the umbilical cord have changed over the years, but today it involves either cauterization or sterilization, or both. Postpartum, the

woman's abdomen is tightly bound with a cloth wrap and she is isolated to a hut for a cleansing sweat bath. (See Cosminsky 1982, 1977, 2001a; Wilson 2007.)

Kevara Wilson (2007) examines several benefits and risks of Mayan midwives' practices. An important value of their practice is that it is culturally acceptable to the Maya. Their practices are familiar and comforting in their culture. In addition, a midwife's reputation with other people and with the spirits accounts for her history of success. Local midwives are also important counterparts to Guatemala's existing national health system. The midwives fill the gap where there are no health facilities in the most remote regions, and they are more likely than medical doctors to travel to rural villages.

Aside from the strengths that Mayan midwives offer, Wilson also identifies a few risks in their practice. The biggest risk occurs when the midwife fails to refer her patient to the hospital when there are complications. Other risks involve sanitation and hygiene when there is a lack of clean water and sterile instruments. There is also some concern over the attention to the newborn immediately after birth because some deaths and illnesses can be prevented with proper care for the baby. Unfortunately, some midwives prescribe pharmaceutical medicines without fully understanding their uses or contraindications. Cosminsky and Scrimshaw note the potential danger for prescription drug interactions, overuse, and abuse (1980:276). Finally, many midwives have no education other than their health training courses and are often illiterate.

INFORMANTS

Even though the women I interviewed were from different parts of the southern highlands, the demographics of the informants were very similar. They all received some

government training in the healing arts and even took some of the same training classes together. Aside from caring for their families, the primary employment of the six women who served as my informants was to care for the domestic needs of their family members. After that, they could provide medical attention to the members of their neighborhood communities. All informants owned their own homes and all of them cultivated herbs in some way at their homes. The informants' ages ranged from forty-two to sixty-two. Five of the six women had between four and eight children, and three had grandchildren as well. Their primary languages ranged from Spanish to two different Mayan languages. Their educational background ranged from none to some secondary schooling, aside from the clinical training mandated by the government for safe practices. All of the six women primarily used historically traditional Mayan methods of curing. Of the six informants, half were of full Mayan descent and half were Ladino. All of their medical services were compensated either by payment in cash of a negotiated price or else provided free to a patient who could not afford payment. (See Appendix for interview questions.)

Teresa. Teresa is a renowned Mayan midwife within and beyond her community. As the home of three generations of her family simultaneously, Teresa's property outside of Chichicastenango served several functions. It held a storefront on the street where they sold convenience-store items, a large garden in the back with a barn for livestock, and finally a small office on the side of the house facing the patio that served as a treatment clinic and *botánica*. The clinic office was a small room not much larger than a storage room that had a filing cabinet, a desk, and two tall shelves from corner to corner and from ceiling to floor containing numerous large jars of dried herbs that Teresa bought from other vendors and also grew in her own garden. On the back wall hung seven framed certificates documenting her attendance to clinical training

courses (Figure 11). A large brass trophy on her desk labeled her an anonymous hero for the year of 2003. Despite all of her successes, Teresa is illiterate and speaks minimal Spanish.

Figure 11. Teresa's herb room with certificates of training.

Maria. Maria is an experienced Mayan herbalist living outside of San José Pacul. She can read and write minimal Spanish, but speaks it very well. Her house was also home to three generations simultaneously and served several functions as well. At the time, her son was in the process of building a second home on her property. When she gave me a tour of the property outside her house, past the livestock, she pointed to all the medicinal plants she grew and what she used them for. The most important plant to her was a white willow tree, the aspirin tree (*Salix alba*), without which she claims she would not be alive today. She explained that she learned about this tree many years ago from a doctor in the city, and after some experimentation, she was able to make an effective formula for an ailment she suffered from for several years.

Laura. Laura is a Mayan midwife with the largest clientele in her community. She can moderately speak and read Spanish, and write it minimally. Laura's house in Santa María Cauqué was multifunctional as well. The house comprised of only two bedrooms, an attached outhouse, a covered driveway, and a covered outdoor kitchen with an open fire pit for cooking meals. Outside the kitchen stood two large open plastic barrels full of rainwater that they used

for washing and drinking by scooping out small bucketfuls at a time into a large nearby sink. Their rudimentary piped water was not as reliable a source as the constantly available tropical rainwater. The drawback, of course, is the inherent threat of malaria and other waterborne diseases. In the central courtyard, Laura grew a few fruit trees and some medicinal plants. She also owned about a dozen laying hens in a coop around the corner from her house. In addition, her family worked (and presumably owned) several single-crop vegetable fields at the edge of her *aldea* where numerous other plots provided her community with land to work. The front room served as an herbal clinic where she accepted patients and sold herbal remedies from a glass display case. The display case held herbal tinctures, oils, and teas made from herbs she grew at home, collected from the wild, or bought from the market (Figure 12). Numerous

Figure 12. (Left) Laura's glass display case.

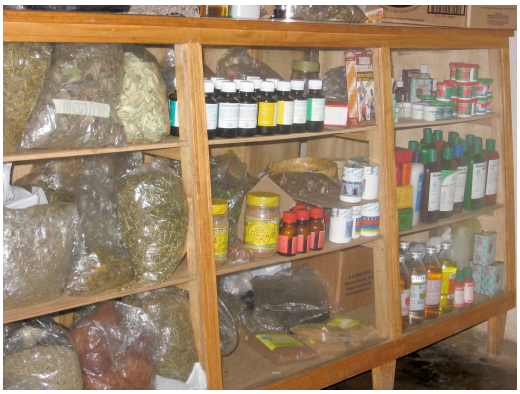


Figure 13. (Right) Dried hanging herbs.

bundles of dried herbs hung from a stretched string above the case which she could sell in bulk or use later to make medicinal remedies (Figure 13). Against the wall, at the other end of the room, stood a small altar table with flowers, pictures of Catholic saints, incense, and other typical religious offerings.

When I arrived at Laura's house early one morning for an interview, two patients from the village were standing outside her home waiting to be seen for medical treatment. One of the patients was an elderly woman who could not pay Laura for her help. However, she was not denied service. She was sent home with a bottle of tincture from the display case along with instructions for use. The other patient was a young woman with a baby. The baby was crying and had kept the mother up all night. Laura took the baby into one of the bedrooms and laid it down on the bed. She lifted the baby's shirt and rubbed a medicinal oil onto the baby's stomach with both hands. Afterwards, Laura gave the mother further instructions and sent her on her way. Only after the first two patients of the day were cared for could I conduct my interview with Laura. Witnessing the primacy of these patients' health to Laura, I realized the importance and value of Laura's and other practitioners' knowledge not only to the community in which they live today, but also to the lives of future generations.

Blanca. Blanca is a Ladina herbalist and is fluent in Spanish. Although Blanca's home in the city had more cement than dirt, she was able to incorporate potted plants into her rooftop patio garden. Even with limited space, she kept perennial medicinal plants in her home for ongoing use. She had an altar in her home with a small water fountain, candles, flowers, and pictures of saints. She also owned about an acre of land just outside the city. At her farmhouse property, she was able to grow extensive varieties of medicinal plants. The property had a simple home that mostly served as a training clinic for parts of the year. The home was minimally furnished and had only basic amenities. Behind the home was a smaller make-shift structure that served as the caretakers' quarters. The caretakers served as both groundskeepers and security.

Juana and Elena. The last two informants worked in a non-profit mission clinic called St. Vincent's located in the Landivar sector, an urban slum of Guatemala City near the city's landfill. Both women are Ladina herbalists and fluent in Spanish. These two women offered free or inexpensive medical services to members of that neighborhood. When I told people I was going there to meet them, everyone's eyes widened and they all made sure that I understood how dangerous that part of town really was. They cautioned me to get there early, to leave early, and to speak to no one on the way. However, the clinic was clean and had two treatment rooms, an office with storage, a workroom, and a lobby where they sold dried herbs and various medicinal products. They explained how much the people in that neighborhood needed medical services and could not get them anywhere else. The women admitted that they worked in a challenging neighborhood, but they also expressed that the difficulty made it that much more rewarding.

MEDICAL ETHNOBOTANY

Although there are many ethnographic accounts of Mayan botany and of Mayan medicine, there is little information as to how plants are used in women's medicine. Cosminsky reports similar findings on existing Mayan botanical medicine. She advocates for more research in the technical areas of botanical medicine, "Many ethnographies and botanical studies mention plants and substances used for menstrual regulation. However, little ethnobotanical information is provided, such as details of preparation, dosage, reported effectiveness, and so on" (2001c:269). Most of the current ethnobotany texts contain plants used for all types of ailments, including those used for menstruation and other women's health issues. A great addition to the anthropological literature on Mayan medicine would be a concise reference of only the plants

used for women's health. A reference of this type would be extremely useful for all studies of midwifery, menstruation, pregnancy, and fertility in any culture.

In order to narrow my investigation down to a single topic, I chose one specific ailment that is experienced solely by women. My observation in the U.S. is that although not every woman experiences menstrual cramps, many women encounter various monthly pains to varying degrees. Symptoms of menstrual pain for women in the United Sates can range from minor discomfort to chronic or debilitating, yet temporary, pain. These pains may include fatigue, headaches, migraines, hot/cold flashes, nausea, cramping, vomiting, bloating, backache, acne, diarrhea, constipation, anger, depression, anxiety, or insomnia. The Spanish translation for menstrual cramps in Guatemala is *dolor de menstruacion*, literally menstrual pain, which can refer linguistically to any of the previously mentioned conditions. When asked about their experiences with "menstrual pain," not one of my informants admitted to having had any symptoms in her entire life. Rare as it was, however, it was not unheard of within their communities. This absence of menstrual pain among Guatemalan Mayan women holds greater anthropological meaning than I can discuss in this paper. The difference between women's symptomologies in the United States and in Guatemala is a difficult anthropological question. Whether it is a difference of dress, food, custom, religion, technology, or biochemistry, the differences in cultures are stark and may prove impossible to identify any direct causes or absences of painful menses. However, Mayan or not, all women are biologically similar enough to try the same treatments if desired.

The results from my research show that specific medicinal herbs are being used by Mayan women in Guatemala for treating pain and discomfort associated with menstruation,

pregnancy, and menopause and are the first choices over the option of seeking a western medical doctor. While some of these plants were cautioned against for use especially during pregnancy, most of the plants were used as general treatments for the entire body (i.e., nausea) rather than for a specific ailment like a headache. Plants used for general treatments work on treating the body as a whole, reflecting a holistic approach to medicine. While my informants identified many plants for treating menstrual cramps throughout this study, it became clear almost immediately that they all knew most of the same plants. Of the seven plants most frequently identified by my informants for treating menstrual pain, perhaps only three of them are commonly known in the United States, let alone an extensive knowledge of those three plants' medicinal values. The next section discusses in further detail the medicinal properties of four of the seven identified plants.

Known to aid generally in illness or distress, *Matricaria recutita* (chamomile) and *Chrysanthemum parthenium* (feverfew) might be well-known in the United States, while *Rosmarinus officinalis* (rosemary) and *Lippia graveolens* (oregano) are known primarily as culinary seasonings in the States. *Lippia alba* (salvia santa) is well known in Guatemala as a cure-all, useful for many illnesses and discomforts. The four plants my informants discussed most frequently, *Matricaria recutita*, *Chrysanthemum parthenium*, *Achillea millefolium* (yarrow), and *Tagetes lucida* (*pericón*), all belong to the Asteraceae (Compositae) family and all are perennials except for *Matricaria recutita* which is known to have a perennial relative. All four are reported to be useful as calmatives, tonics, and anti-inflammatories.

The chemical composition of plants is more complex than modern science can explain. Healing effects of plants cannot always be associated with a single chemical or compound. A

simplistic synergy of two or more chemicals may be more potent than the individual components alone. It is not enough to only isolate the chemical with the highest concentration. By identifying all the existing chemicals in a medicinal plant's extracts, we can learn more about the plant's chemical make-up. It is also important to note that the varieties of all the plant species from Guatemala might differ slightly from those found in other countries, possibly due to geographic differences in climate, elevation, or even latitude.

Matricaria recutita

Commonly known as chamomile (Figure 14) in English and *manzanilla* in Spanish, there are numerous varieties of this well-known herb. Native to Europe and Western Asia, German chamomile has long been used within many cultures, including Europeans, to bring pacification to a nervous patient. *M. recutita* has yellow disc flowers and less than twenty elongated white ray flowers, each fewer than ten millimeters long. The bright green leaves are alternate bipinnate or tripinnate, linear filiform, and glabrous. The plant can grow up to half a meter tall and is often cultivated in domestic gardens and commonly found among other weeds in conspicuous places, such as fields, roadsides, and vacant lots.

Figure 14. ***Matricaria recutita*.**

The flower heads are used in folk remedies to make teas, tinctures, and baths for patients. The essential oils are also used in commercial bath products such as soaps, perfumes, shampoos, lotions, and hair products. As a home remedy, it is a tonic, calmative, mild sedative, and digestive. Laboratory tests have shown chamomile to have anti-inflammatory, anti-histamine, and anti-spasmodic effects and may also benefit as an anti-allergenic, antioxidant, anti-cancer agent, anti-microbial, anti-platelet, and hepatic regulator (McKay and Blumberg 2006). The major chemical compounds in *M. recutita* are terpenoids (azulene and bisabolol), flavonoids, coumarins, and phenols (McKay and Blumberg 2006:519-520). These compounds may be the sources of the beneficial actions of this common plant. Other chemicals not identified or existing in lower quantities might also contribute to the effectiveness of chamomile.

Tagetes lucida

Mexican tarragon (Figure 15), known as *pericón* in Guatemala, has yellow-orange disc flowers and five orange ray flowers each about one inch long. The green leaves are elongated linear, opposite sessile, serrulate, and up to three inches long. The plant does not reach more than a meter in height and can be found in open fields, oak forests, and domestic gardens. *T. lucida* is native to the Central American countries of Mexico and Guatemala and is used mostly for stomachaches and nausea. This plant can be used as a substitute for French Tarragon in cooking recipes. Although not as well known in the United States, *pericón* is a well-known and well-used herb in Mexico and Guatemala.

Figure 15. ***Tagetes lucida.***

Pericón is taken mainly as a tea but is also used as a culinary spice. Other uses of it include incense, dye, and as a smoking ingredient for religious ceremonies. As a poultice, this herb has been used to treat insect stings and bites. Gardeners grow plants from this genus to repel unwanted insects while attracting desirable ones. *T. lucida* has been proven in the laboratory to have properties of being an anti-aggregant, antibacterial, antifungal, anti-hemorrhagic, anti-inflammatory, antispasmodic, antioxidant, antiplatelet, calmative, digestive, and tonic (Céspedes et al. 2006:3522). These properties are possibly attributed to the presence of alkaloids, coumarins, flavonoids, terpenes, phenols, and sterols (Céspedes et al. 2006:3522; Villar et al. 1997:444). Other chemicals in this plant might contribute to its effectiveness as a natural healing agent.

Achillea millefolium

Known as yarrow (Figure16) in the United States, this perennial herb is named after the Greek hero, Achilles. In Spanish, it is called *Mil en Rama*, literally "a thousand on a branch," referring to the cluster of tiny flowers on the stalk. The plant can grow up to a meter tall and can be found in fields or along riverbanks, roadsides, slopes, and in domestic gardens or empty lots. The flowers grow in flat-top corymbs and are less than half an inch wide with white ray flowers

and yellow disc flowers. The leaves are lanceolate, segmented, dissected, sessile, pubescent, and alternate, and are up to six inches long and one inch wide. There are several species of *Achillea* and subspecies of *A. millefolium* that are all referred to as yarrow yet vary in size, color, and geographic distribution. The species in Guatemala could be the European introduced *A. millefolium* or a North American version like *A. lanulosa* or *A. borealis* (Chandler et al.

Figure 16. *Achillea millefolium*.

1982:204). Traditionally, this plant is taken internally as a tea or externally as a poultice for relief from many different ailments. Native Americans have reported using yarrow for over thirty different ailments (Chandler et al. 1982:206-207). Pregnant women are cautioned against using this plant, as it is quite potent and can be an abortificant.

Like *Tagetes*, yarrow can be used as a dye, as well as grown for insect control in gardens. The nutritious leaves can be eaten raw or cooked. *A. millefolium* has been used as an anti-inflammatory, antioxidant, antiseptic, anti-hemorrhagic, antispasmodic, calmative, digestive, and tonic (Chandler et al. 1982). More than 120 chemical compounds have been identified in this plant including alkaloids, terpenoids, flavonoids, coumarins, tannins, sterols, and salicyclic acid (phenol) (Chandler et al. 1982:209-216). As the representative plant with the most uses, the most compounds (Figure 17), and the oldest history of these four selected plants, yarrow has by far the

most potential for healing. Although many studies have analyzed the chemical make-up of yarrow, actual biochemical effects in the human body may still be inconclusive. While modern medical testing lags behind ancient wisdom in identifying pharmaceutical benefits of this plant, traditional cultures continue to use it today without the evidence of laboratory testing.

	M. recutita	*T. lucida*	*A. millefolium*	*C. parthenium*
Alkoloids		X	X	
Phenols	X	X	X	
Sterols		X	X	
Tannins			X	
Flavonoids	X	X	X	
Coumarins	X	X	X	
Terpenoids	X	X	X	X

Figure 17. Common chemical compounds found present in four medicinal plants.

Chrysanthemum parthenium

Commonly known as feverfew (Figure 18) in English, its name hints at its medicinal use. It has been used in the past to treat high fevers as well as migraines. Known as *altamisa* in Spanish, the Guatemalans use this plant in general to aid a variety of common female complaints, such as any pain associated with menstruation like cramps or headaches. The plant has yellow disc flowers and ten to twenty white ray flowers that are less than a centimeter long. The leaves are alternate, odd pinnate, segmented, and serrated. Feverfew can grow between one and two feet tall and is found mostly in domestic gardens and open fields. Caution should be used with this plant as the fresh leaves have been known to be toxic when ingested. One study

shows that the dried leaves have fewer chemicals and are also less potent than when fresh (Barsby et al. 1993).

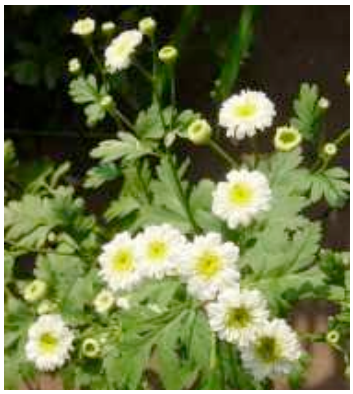


Figure 18. *Chrysanthemum parthenium*.

C. parthenium is primarily an anti-inflammatory used effectively for migraine headaches; but it also holds some value as an antiplatelet, calmative, and tonic (Barsby et al. 1993; Gromek et al. 1991). The main constituents of this plant are sesquiterpene lactones, the primary one being parthenolide (Gromek et al. 1991:213). Melatonin has also been reported by chemical analysis (Murch et al. 1997). Although parthenolide is credited as being the source for migraine relief in feverfew, melatonin may also contribute to the effects of this remedy. Other unidentified agents in this plant might provide us with more information as to the potency and potential of this plant.

PLANT SOURCES

The medicinal plant supplies that my informants had in their homes or that they sold in the markets came from commercial, wild, and domestic sources. For identification purposes, I purchased dried specimens of twelve plant species mentioned by my informants from several vendors (all of whom were also female) at the *mercado* (local market) in Antigua Guatemala (Figure 19). When I asked where the vendors acquired such products, they responded with vague

answers such as some regional location outside of Antigua. Most of the vendors packaged the specimens individually in plastic bags, dried banana leaves or newspaper, or in bundles tied with grass. None of the items were labeled, but the vendors could identify everything they had for sale as well as recite what the plants are used for.

Figure 19. Market display of herbs for sale.

Wild sources of the plants' locations are rarely disclosed. Even the women selling plants in the market refer to a distant farm or a vague hillside location in a distant region. Only one informant admitted to gathering wild herbs. Her collection site was several miles from her home on a hillside overlooking her *aldea*. She visited the site not too frequently and never over-harvested the plants in order to ensure their regeneration. Although she implied that the men in her family did not participate in the wild harvesting, it would not be surprising if the men accompanied them if only for the safety and protection of the women.

Household sources for medicinal plants range from home patios to small farms. Many Guatemalans own very little land and therefore can only grow herbs in containers on their patios or in small patches wherever they can find space between the cement and the border of their property. Others are able to make use of every square inch of soil they own. A small backyard plot provided several beds for one of my informant's herbal garden. A neighborhood empty lot

became a community garden for native, medicinal, and edible plants. Although one woman owned additional farming plots, she only used these plots for growing large quantities of one or two types of vegetables for sale at the local markets. She only cultivated medicinal plants for her home clinic in her back yard and in the hillsides above her *aldea*. Another informant grew less than a dozen medicinal plants on her small patio at her home in the capital, but also owned a *granjita* (small farm) on the outskirts of the capital where she grew an extensive variety of medicinal herbs. These women's use of land demonstrates their ability to conserve their economic and natural resources. Their dedicated use of space also illustrates the importance of growing plants to these women as well as their depth of knowledge not only to grow the plants but to use the plants successfully as medicine.

I was surprised by a conversation I had with a cab driver during my ride home one day. When I told him I was studying Mayan medicine, he asked me what types of plants my informants had named so far. I told him *mil en rama* (yarrow) and *pericón* (tagetes) were two very popular plants in Guatemala. He said he knew these plants as well as their uses because his mother used to grow them at her house. To hear the same knowledge of local healers coming from a middle-aged cab driver wearing blue jeans, sneakers, and a t-shirt while using a cell phone sounded absurd at first. Later, I realized that hearing him speak the exact words of my informants as he drove was evidence to me that these plants have been known and used for long enough to now be regarded as common knowledge among many Guatemalans.

Even more astounding to me was hearing the casual knowledge of various children reciting all the plants they knew and the corresponding treatments they are used for. A young Mayan girl picked a vibrant and diverse bouquet of wildflowers while walking with me on a

rural road to her house (Figure 20). She could name each flower in Spanish and knew which ones were medicinal and which ones were dangerous despite their beautiful colors. In addition to the

Figure 20. Young girl with wildflowers.

flowers on this road, she could also name the trees, their fruits, and describe the life cycle of a seed. Such extensive knowledge at such a young age exemplifies a deep cultural understanding of local natural systems and processes. These children's knowledge of medicinal plants is evidence of the remnants of an ancient practice that has survived through the centuries. Perhaps the knowledge these children hold can assure the continuation of their ancestors' knowledge into future generations.

CHAPTER FOUR

MEDICAL ACCESS

A notable contrast between my study and Cosminsky's study in 1972 is patients' preferences for the "five sequential steps in resource utilization" (335). Cosminsky found that patients would first begin seeking treatment at a pharmacy and then continue with a clinic and/or doctor, followed by home treatments, and finally a hospital visit if necessary and only using a native specialist after all these options had failed. My research, on the other hand, produced nearly opposite results. All six of my informants claimed to use home remedies first, followed immediately by a native specialist, then a pharmacy, continuing with a clinic and/or doctor, and finally a hospital visit only when necessary. As to the difference in our research findings, I can only speculate on the influence of the political climate on informants' responses at the time of the research. Of her informants, 93% were *indígenas* leaving only 7% Ladino (1972:329). At the time, the *indígenas* may have responded negatively towards their own traditional practices for fear that the national government and/or the dominant religious forces would punish them accordingly as was historically the case (see Orellana 1987).

In a more recent study by Cosminsky, patients showed tendencies similar to my findings for medical resource utilization. "A clear sequence or hierarchy of resort does not seem to exist, although the trend is to begin with low cost or home remedies and move to more expensive resources as the course of the illness proceeds and becomes more serious" (Cosminsky and Scrimshaw 1980:275). She also describes a more haphazard approach to treating illnesses. There exists "a variety of options, some more accessible than others, some cheaper than others" (ibid.).

She goes on to explain that a patient can rotate between select treatments, repeat certain ones, or skip others depending on the perceived severity of the illness. Her case studies in the same report describe several such incidences in which patients make very unpredictable choices when choosing their treatment options.

Another difference I found in my research was the variable of travel distance for patients. Cosminsky found that travel distance did not have a sufficient effect on a patient's decision to seek medical help (1972:331). However, the further away I was from metropolitan areas, the more reluctance I found among the Maya to seek modern medicine. There may be several reasons for this. Each *aldea* has at least one traditional healer living and practicing locally. The patient may not have or be able to afford transportation to a modern medical facility. The patient may not know enough about the benefits of modern medicine to seek its help. Also, the patient might have fear of a modern facility because it does not abide to his or her established cultural practices. The Maya are dispersed all throughout the rugged western highlands, and after having been there, it is easy to see that travel would be a definite factor in one's decision-making process when seeking medical help.

Cosminsky identifies only three variables that seem to show "a significant association with clinic attendance" (1972:334). These variables are limited to religion, language, and employment. Similarly, Acevedo and Hurtado identify three restrictions to the use of formal health services in Guatemala: access, economics, and culture (1997:272). However, I found several other variables that appeared to be affecting the choices of Maya to seek medical help. The three variables of cultural tradition, government policies, and economic resources seemed to explain their reluctance to use modern medicine. Major aspects of these three variables include

language, religion, regulation, recognition, education, and employment. Discussed in more detail below, these variables and their aspects are possible indicators for when a patient might seek medical advice beyond a local herbalist. Since a Maya's individual perceptions of modern medicine may also contribute to the acceptance or avoidance of it, medical access can also be viewed as modern medicine's access to its patients. As Hawkins and Adams point out, "ethnic minority populations often prefer indigenous medical services over those provided by Western medicine" (2007:4) and therefore may seek only traditional medicine. Community outreach is one way to educate and inform new patients about the benefits of modern medicine.

CULTURAL TRADITION

Differences between Mayan and Western cultures inhibit the Maya from fully adopting biomedical practices. General cultural beliefs about the body and causes of illness greatly influence a person's willingness to use new treatments (see Berry 2006). The two most important aspects of culture that control medical preference in Guatemala appear to be language and religion. The language barrier discourages both the Western doctor and the Mayan patient and miscommunication can cause unnecessary treatment failures. Religious sanctions over time have favored Catholic faith over Mayan beliefs. However, in both Western and non-Western sectors, popular medical systems are not fully separated from their corresponding religions. Western religious practices continue to infiltrate the Guatemalan society, while the Mayan culture slowly continues to degrade in strength, presence, and value.

Language

Language plays an important role in the healing process for Mayan patients. Prayer, or *oración*, is a primary component in the everyday lives of the Maya. They pray to saints, spirits, and gods daily and use prayer to navigate themselves through their lives. In those regards, Western medical language may not fulfill the verbal requirements for a Mayan patient to heal properly. Spanish is the national language of all but one Central American country. According to the World Health Organization, Guatemala's literacy rate is sixty-nine percent (2009). There are over thirty Mayan languages spoken throughout Central America. The three Mayan languages encountered during this study were Quiche (Quiché, K'iche', Kiché), Cakchiquel (K'aqchikel, Cakchikel, Kaqchiquel), and Kekchi (Quechi, Kekchí, Q'eqchi'). None of the three Maya-speaking informants spoke Spanish above the intermediate level. However, they could understand the language without any hesitation. Two of the Mayan informants could read and write minimal Spanish, the third was unable to do either yet was regarded as the most esteemed of the three by their constituents. Therefore, the lack of ability to speak proficient Spanish does not detract from their performance as medical practitioners. In their communities, they are highly respected and frequently consulted by a large Mayan clientele. The value of these healers as culturally appropriate authorities is reflected in their long-term success as local professionals.

Communication barriers can inhibit the success rates of Western doctors at local clinics and hospitals. Translators in the examination room can also create confusion, misunderstanding, and discomfort, causing failure to convey detailed instructions for the patient to follow, and ultimately failure of the prescribed treatment. Written instructions for medications are futile for illiterate patients.

> In addition, the doctor frequently uses terminology which he takes for granted, but which may be unfamiliar to the average patient. Pride, shame, and embarrassment prevent the patient from admitting his ignorance and asking for an explanation. [Cosminsky 1972:332]

Medical anthropologists can be invaluable in these types of situations. A friend of mine in southern California works as a midwife in the county hospital. She told me that her facility sees a very large percentage of pregnant Guatemalan Mayan women, almost none of whom speak any English or Spanish. My friend expressed her concern to me that she wants desperately to help these women but feels as though her hands are tied because of the language barrier. The hospital has had a difficult time finding appropriate translators, and was therefore limited in the services that it could offer to the Mayan women. As facilitator of medical programs for foreign patients, a medical anthropologist can ensure proper care by first finding appropriate translators and then consulting with patients and doctors to negotiate culturally appropriate treatment plans.

Religion

A major force in the suppression of Mayan medicine has been Catholicism. The ancient Mayan religion is based on ancestral traditions. The Popol Vuh is the ancient Quiche Maya text of spiritual origination. Prayer to gods related to agriculture, such as the corn god or the rain god, was interpreted by the Spaniards at the time of conquest as paganism and heathenism (see Orellana 1987). Enforced conversion to the Catholic Church and faith has attempted to eliminate the Mayan worship of ulterior gods. The historical progression of Eurocentric domination of economics, government, and religion is illustrative of a continual process towards the elimination

of the indigenous culture. “Just as in the earlier Spanish Conquest, Catholicism was seen as the only true religion, and in today’s conquest, Western medicine is viewed by many of its practitioners as the only true medical system” (Cosminsky 1983:167). The conceit of the European culture was and continues today to be a major source for the denigration of the Mayan culture. Although the Maya still subscribe to their traditional religion, many have converted to Mayan Catholicism, incorporating Western elements into their traditional beliefs and practices, perhaps despite their desire to do so willingly.

Most hospitals in the U.S. have chapels within them for people to pray for those who are afflicted; spirits and healers are also inseparable for the Maya. The prevalence of religion in the Mayan culture cannot be separated from its medicine. Since ancient times, the Maya have believed in spirits that control the plants and animals, and it is from these sources of nature that the healers retrieve medicine and medicinal powers for their patients. The selection for Mayan healers is historically based on spiritual proximity to these gods and ancestors. Mayan healers are chosen by divine force because of their abilities to communicate with the spiritual world and are required as spiritual healers to keep good relations with the supernatural realm (Cosminsky 2001b:351; Wilson 2007:142). For these reasons, healers can have the ability to treat both medical and spiritual afflictions.

Many of the traditional illnesses recognized in the Mayan medical system are initiated by spiritual sources. Western medicine does not recognize spiritual or supernatural illnesses such as *susto* (fright), *mal de ojo* (evil eye), *aire* (coldness), and *empacho* (indigestion) (see Méndez 1983). The only thing that can cure a spiritual affliction is a spiritual treatment by a spiritual healer. Some of these treatments practiced by the Maya are in the form of prayer, herbal baths,

and repetitive ritual. Because of the prevalence of religion around the world, it would be disrespectful to regard the Mayan religion as merely a form of placebo medicine. To favor one religion over another is erroneously ethnocentric. If such practices are found to be harmful, as opposed to less than effective or ineffective, then proper corrective action would be to adjust the practice by removing the harmful agent without destroying the relevant faith.

GOVERNMENT POLICIES

Guatemala began enforcing government health regulations in the 1950s that intended to provide proper medical care and assistance to their patients. In addition to attending regular training seminars in order to keep their license, midwives are required to report all births and deaths to the government for keeping accurate demographic records (Cosminsky 2001b:360). The midwives are also required to refer any pregnancies that have perceived complications to the nearest hospital or health clinic (Cosminsky 2001a:203, 2001b:366; Hurtado and Sáenz 2001:223). The combination of licensing and reporting was hoped to decrease the maternal and infant mortality rates. Amanda Hopkinson reported 85 infant deaths per 1,000 births in 1991 (159). Guatemala's infant mortality rate is now 31 per 1,000 births and the maternal mortality rate is 290 per 100,000 births, given that only 41% of all births are attended by a practitioner (World Health Organization 2009).[3] In order to increase clinic attendances, advocates of modern medicine need to increase community awareness of its benefits by promoting available services.

[3] See footnote 2, page 24.

Regulation

The government training programs initiated in 1955 had several negative characteristics. Although the intention was to curtail mother and infant mortality, the programs were often less than helpful, even intimidating, to many *comadronas*. The lack of cultural understanding by the biomedical professionals further widened the gap between the Ladinos and the Maya. Many of the doctors did not speak any Mayan languages and knew nothing about their traditional practices (Carey 2006:47-49). If the training programs were more culturally relative, they might have had greater success at conveying the importance of certain medical practices such as hygiene and risk prevention.

> Training can result in increased prestige by providing [the midwife] with increased knowledge and a status symbol, thus strengthening her leadership in the community… On the other hand, the midwife's own authoritative knowledge is contested and often dismissed by biomedical staff and government officials, decreasing her autonomy and making her more dependent on the biomedical system and putting her in a subordinate status in relation to the biomedical personnel. [Cosminsky 2001a:186-187]

The mistreatment of indigenous healers by government officials reflects their ongoing history of mistreatment in Guatemala. These programs, designed to promote health, succeeded in the further detriment of Mayan confidence by being "condemnatory and condescending" (Cosminsky 1977:74) and "unidirectional, hierarchical, and medicocentric, with no room for what the midwives themselves might think" (Cosminsky 2001b:361). Similar findings report

racism, asymmetrical power, and Ladino superiority (Carey 2006:46). In such a unilateral environment, it is difficult to imagine that very much learning is really accomplished.

Although the government has a history of inappropriate cultural intervention, the introduction of vitamin injections is one example of how its regulation has succeeded. The success of vitamin injections, however, cannot be fully understood. One of Cosminsky's studies in Guatemala revealed a cultural belief that supported the value of vitamin supplements. She explains that the injection therapy supports the cultural correlation between strength and health.

> People believe that vitamins… are substances that help cure by giving one strength. This is in accordance with the folk belief that strong blood will give one resistance against illness and evil influences and conversely, weak blood increases one's susceptibility to illness. Vitamins… have been integrated into the folk belief system as inherent strength-givers through this strong-weak principle. [Cosminsky and Scrimshaw 1980:275]

Cosminsky believes that even though they may not fully understand the concept of vitamin therapy, by applying their own etiology, the Guatemalans were able to syncretize the two medical systems together resulting in a successful treatment for many patients. I believe there may be an element of interest in the technology of the syringe that has also led to the success of injections.

The effects of the training programs differed among people and between communities. Midwives feared both accepting and rejecting the new strict regulations for prenatal and neonatal care. Some midwives became afraid to refer their patients to hospitals in the event that their patients would be denied treatment (Cosminsky 2001a:203). Others refused to follow training

guidelines for fear that their community members would lose faith in their authoritative knowledge (Carey 2006:47). A more productive response was an integration, or selective application, of training materials (Cosminsky 2001a:185). Several traditional healers inevitably incorporated some of what they learned into their traditional practices. However, while indigenous midwives were authorities in their communities before, the governmental training programs did not necessarily add to or detract from their pre-existing authority.

Despite a midwife's recommendation for a patient to seek medical help from a hospital or doctor, there is no control over whether the patient will abide that referral. Elena Hurtado and Eugenia Sáenz de Tejada discuss some reasons why Mayan women have not complied with their midwife's referral to health facilities during complicated pregnancies (2001:225). These reasons include financial hardship, travel distance, fear of the health facility and its employees, distrust in the care provided at the health facility, devotion to the traditional midwife, and lack of permission to go from the woman's husband. The authors also suggest some critical changes that might increase compliance with the referral system. These suggestions include extending facilities' hours, staffing multilingual employees, ensuring sensitivity and friendliness, allowing the traditional midwife admission for the patient's support and comfort, assigning female physicians, explaining treatments, and providing informational materials about the pregnancy to the patient.

Recognition

Traditional knowledge, gender roles, and social duties of individual Maya as members of their communities represent more than the achievements of one individual. Acquired abilities

represent the accumulation of accomplishments in traditional knowledge within their entire culture as evident in the survival of the Mayan people today. All of my informants attested to learning their medical knowledge from their mothers or fathers at a very young age. From the time they could walk, they were helping their mothers tend gardens and cook meals. Similarly, as they learned to talk, they slowly learned the common names for the plants they repeatedly saw in and around their homes.

The practitioner of ancient Mayan medicine is the embodiment of the union between religious and healing practices. However, the role of the practitioner is not limited to being a divine healer. The social responsibilities of traditional healers are equally important in the Mayan community (Cosminsky 1977:75).

> The shaman always shares a meal and drinks with the patient's family. The diagnosis and treatment are explained to them and they must participate in the ritual, confession, and treatment. The patient thus has the support of his family, who plays an active role in the curing process. Modern medicine focuses solely on the individual patient. [Cosminsky 1972:333]

Local healers are also community activists, representatives, leaders, and consultants for a variety of problems besides medical advice (Carey 2006:43-56). They are a source for inner strength and stability for the community members.

Although the Guatemalan government recognizes the existence of traditional Mayan practitioners, it refuses to acknowledge their legitimacy as medical authorities in their communities. Any attempt to recognize the traditional healers by the national government has been to accuse them of practicing inadequate medical services.

> The formal health services' recognition of the midwives' work does not imply a relationship which is symmetric or free from conflict. [T]he fact that only trained midwives are recognized reflects the prevalence in the biomedical system of beliefs about the system of traditional health beliefs…On the other hand, the efforts to "modernize" midwives can alienate them from their clients, which can weaken their role as a link with formal health services. [Acevedo and Hurtado 1997:276-277]

By recognizing healers as leaders of their communities, government facilities would also have to recognize the communities to which they belong – something Guatemala might not be willing or able to do by economical or political means.

ECONOMIC RESOURCES

Although Cosminsky claims that economic income and status have little or no influence on whether Mayan women chose traditional or biomedical treatments, results from my research indicate otherwise. Two common indicators of economic status are education level and socioeconomic class. A person's education level can be a strong indicator of both income level and economic status. Likewise, a person's education-income level can determine a person's ability or inability to afford doctor or hospital fees. The national average annual income (GDP) is a little more than US$5,000 (World Health Organization 2009); and some statistics indicate that 90% of the indigenous population is living in poverty (World Bank 2009). High medical bills can discourage a person from using such services. Therefore income, as defined by both education and employment, is an important factor in an individual's decision making process for seeking

medical help. Whether a person desires to see a biomedical professional or not, he or she should at least have the option to financially do so. Without the necessary financial resources to receive hospital treatment, a patient has no choice but to see a traditional healer, self-medicate, which can be dangerous, or let the illness go on untreated, which can cause further health complications.

Education

Economic status is often a dependent variable of a person's education. While there have been government initiatives to host Spanish language courses in rural areas, most rural children do not attend primary education past the second grade. Meanwhile, secondary education is a privilege available mostly to middle class Ladinos. "The continuing high rate of female illiteracy and lack of access to medical facilities also reflects the larger context of poverty, marginalization, national educational policies, and lack of investment and development in these regions" (Cosminsky 2001a:209). On the other hand, the character of traditional knowledge is that it is learned since birth from parents, grandparents, relatives, neighbors, and community members. In this sense, *indígenas* experience education throughout their entire lives. In regards to these two different types of education, we could assume that a person will trust what they know. While *indígenas* might visit *curanderos* more than clinics, Ladinos might do the exact opposite.

Mayan women's dual roles as mothers and wives currently and traditionally overlap heavily with their roles as daughters and sisters. It is expected that when a young girl is old enough to help her mother, she must begin to take more responsibilities in the house and with her

family. One of my informants, Laura, has four children, the youngest being the only daughter. While none of the children were offered much opportunity to attend primary or secondary education, the sons are given any available advantage over the daughter. Even if she was given an opportunity to attend school, her domestic responsibilities took precedence. Since she was old enough to walk, Laura trained her in all the household duties. Now that she is older, the entire family relies upon her for those duties. While the parents and younger sons tend to the farm crops every day, their eldest son continually maintains household and automotive repairs. Following these divisions of labor, the daughter is expected to do all the cooking and cleaning for the entire family while her mother also maintains clinic duties. When I discussed her future plans with her, the young girl said that she wanted to learn English so that she could come to the United States and get a good job. With her ability to read, speak, and write limited Spanish, I gave her a Spanish-English dictionary to help her in her endeavors. I only wonder how she will be able to finance her dreams while her family's income is shared among all six members and favored to the sons.

Employment

Cosminsky found that the location and type of employment have proven to have direct impacts on clinical visitation. Seasonal wage laborers on coastal plantations were found to frequent clinics less often during the harvest season and more often during the off-season (Cosminsky 1972:330). In addition, coastal migrations may cause seasonal illnesses resulting in punctuated attendance at the end of the season when migrants return to the inlands (ibid.). Non-migrant and non-seasonal employment could also have an impact on medical choice. People

living in urban areas because of permanent, urban employment positions might seek local doctors first because of their abundance in urban settings and the ease of a short travel distance, as opposed to seeking a traditional healer in a remote rural location. In contrast, a rural patient might seek a local traditional healer first if the nearest clinic or hospital is too far away. Time spent traveling rather than working is a consideration that the patient must foresee before leaving. Therefore, employment can have several different effects on an individual's choice for medical treatment, aside from the amount of income available for the medical services.

Several of Cosminsky's works studied the use and practice of midwives on Guatemalan coffee plantations. She found that the resident midwife had attended the majority of all births on the plantation (1977:75; 1982:207; 2001b:346; 2001c:260; Cosminsky and Scrimshaw 1980:270), with the exception of a few that were delivered at the hospital because of complications. Cosminsky discerned that the high use of the midwife's services was due to their trust and comfort with the midwife as reflected in their fear and distrust in modern medicine and to the "cost in time and money" when comparing travel time to potential earnings (1977:82-83). It is my deduction that if there was no midwife on the plantation, many births and pregnancies would have gone unattended. My friend at the county hospital in California told me most of the women who work in the agricultural fields would try to refuse a cesarean delivery even when the doctor insists on it. These women would risk their health before they risked losing their job.

CHAPTER FIVE

CONCLUSION

SUMMARY

The aim of my research project was to understand modern influences on traditional Mayan medicinal practices. My informants were active leaders and trained healers in their communities. Their social roles and medical views were valuable sources of information regarding medicinal herbs, patients' preferences, and political histories of their geographic regions. I found that they primarily used and ascribed to traditional Mayan medical practices. Their overall reaction to modern medicine was a lack of trust and a reluctance to replace their methods with modern techniques. Mayan patients have also been noted to express similar reluctance towards using modern medicine (Hurtado and Sáenz 2001:225; Wilson 2007:138).

There are several texts of general Mayan medicinal plants. There are also texts that discuss Mayan midwifery. Texts on the medicinal plants used by Mayan midwives, however, did not exist, despite my efforts to find them. Since Cosminsky and others also recognize the lack of research in this area, I attempted to contribute to the botanical references with this paper. I described four plants that all of my informants discussed. These plants may be well known in other countries; therefore it would be hard to identify the origination of their uses as medicine. Nonetheless, because the Maya in Guatemala are using these plants as medicine, it would be of good interest to investigate even further into the chemical makeup of these plants' medicinal properties.

I found three important variables, culture, government, and economics, contributing to the choices Maya might make when choosing a medical service. Two aspects of each of these variables help to further explain the factors involved in a patient's decision-making process. When deciding which services to use, the patient may not follow a linear path such as from easiest to hardest or from cheapest to most expensive. The patient might even jump around or between services, sometimes causing more complications to their health. The pluralized medical services available in Guatemala are less than congruent. Organized integration of these services can help both patients and doctors achieve higher clinic attendance and success rates. Although modern medicine can greatly improve traditional Mayan practices by augmenting it in specific areas, it would do injustice to completely replace the Maya's existing medical structure.

DISCUSSION

I remember waiting in the Dallas, Texas, airport for my connecting flight into Guatemala City. The waiting area where I sat soon became a curious magnet for more than ten different large groups of people. The members of each group could be easily distinguished by the color of their t-shirt. It quickly became obvious to me that these people were volunteers for a religious organization, with the colors of their respective shirts representing different geographic regions or sects of their church. After hearing them speak about helping in a clinic with medical supplies, I ventured to ask one of them what their purpose was for going to Guatemala. I was told that they were all Christian volunteers bringing free vaccines and medical supplies to rural children in northern Guatemala. Their endeavor was worthy indeed. I began to reflect on my own purpose for going to Guatemala and to compare my own intentions with theirs. Was it really better to

bring modern services to those who cannot afford them or was it better to empower the poor with the tools and confidence to practice what they know? Who is to say which of our intentions was more influential? In the hopes to integrate ancient and modern medicine, I believe both intentions are equally important. Obviously, there is a dire need for basic medical equipment and supplies to those who cannot afford it. What is less obvious, however, is that there is a long standing medical system in Guatemala that has served its people for centuries and that is at constant threat of extinction. Both services are needed, both are important.

Cosminsky recognizes the imperative of preserving traditional medicinal knowledge among the Maya. Her studies of midwifery reveal the importance of the midwives' traditional knowledge and their roles within their communities. "The loss of knowledge of medicinal plants and their applications means a curtailment of the midwife's role and a loss of her autonomy, making her more dependent on biomedicine" (2001c:270). Instead of their knowledge being "constantly attacked and denigrated by the biomedical authorities and in midwifery training courses" (ibid.) with "condemnation of the traditional practices and attempted imposition of Western medical ones, regardless of their medical advantages or disadvantages" (1977:70), Mayan midwives' traditional knowledge should be respected and incorporated into a modern, integrative national medical system for the Maya in Guatemala. "Any attempt to improve maternal and child health must take into account the local health-care system with its beliefs, practices, and specialists, especially those associated with pregnancy, delivery, and postpartum care" (1977:69). In agreement with Adams and Hawkins, only a pluralized medical system can be affordable, accessible, and acceptable for the Maya to attain good health.

In her 1977 article, Cosminsky outlines four categories for analyzing the effectiveness of traditional midwifery care and practices: beneficial, neutral or harmless, harmful, and uncertain or unknown. "Those traditional practices that are beneficial should be continued and even incorporated into training programs. The usual tendency at present, however, is to condemn them" (Cosminsky 1977:98). Training programs should not promote the abandonment of beneficial practices for the substitution of potentially more harmful or less advantageous ones that could produce opposite results (Cosminsky 1997:101; 1982:214).

A successful medical system will take into account the current socioeconomic status of the patients being treated. Health cannot be achieved if underlying problems such as famine and poverty are not also addressed.

> The biomedical model upon which the training programs are based focuses on the individual midwife and the individual patient, and ignores the sociocultural, economic, and political contexts of poverty, inequality, and underdevelopment that underlie high maternal and infant mortality rates. [Cosminsky 2001a:210]

Training programs, international aid, and government intervention all might have the same goal of providing better health to those who cannot access it. To achieve this mutual goal, however, there also needs to be a focus on the reasons *why* the people cannot access health services. "The continuing high rate of female illiteracy and lack of access to medical facilities also reflects the larger context of poverty, marginalization, national education policies, and lack of investment and development in these regions" (Cosminsky 2001a:209).

Almost all the existing research on the Guatemalan health system agrees that there is not enough interaction between the modern and traditional health systems. “The coexistence of different types of providers suggests that pregnancy-related health services could be improved through closer collaboration between health providers of different types” (Acevedo and Hurtado 1997:272). Several reasons may be preventing a professional cooperation among modern and traditional medical practitioners. “Issues of education and organization, infrastructure and language barriers, along with the unprofitable nature of midwifery, may contribute to the current lack of articulation between the systems” (Wilson 2007:138). There should be a middle ground somewhere for Mayan patients to feel comfortable while receiving the care that they expect. Both medical systems potentially have so much to gain by working together, it would be in both of their best interests to find a way to increase their communication with each other.

The challenges that Mayan midwives face today can be overcome with careful consideration. The history of the Maya in Central America affects Mayan women on a different basis from the culture as a whole. Combining their ethnicity and gender with their medical practices, the Mayan midwife has multiple levels of impediments they must prevail.

> Since the time of the Conquest, asymmetric relations between Mayans and *ladinos* have existed in Guatemala. Therefore, it is not hard to imagine the potential for double discrimination toward traditional midwives, for being Mayan and for being women, to be aggravated by their impoverished socioeconomic status. [Hurtado and Sáenz 2001:223]

Through proper medical education, access to medical supplies and equipment, and respect for cultural tradition from the national government, the midwives can face a brighter future with

more options and more hope for expanding their practices. Supporting Mayan midwives' practices in turn gives support for the disparate Maya that cannot afford, access, or understand modern medicine. As long as the midwives act as representatives for their patients, they can help to disseminate knowledge and services to their communities.

RECOMMENDATIONS

Modern medicine should be delicately introduced into the current uses of traditional Mayan medicine. Appropriate integration of medical pluralism involves respecting people's beliefs while suggesting better forms of treatments. As Cosminsky says, no one is interested in replacing the Mayan medical system. Instead, we would all like everyone to have access to the benefits of modern medicine when it is needed.

> Modernizing midwives do not simply throw out their traditional ways of attending births in favor of the wholesale adoption of biomedical techniques; rather, aspects of both systems – including ways of knowing, specific knowledge, and different forms of power – coexist within a dynamic process that involves contestation, resistance, and accommodation. [2001b:347-348]

It is "imprudent" to assume that midwives "will abandon their own practices in favor of" modern practices (Berry 2006:1968). If a Mayan practitioner sees the value of a particular treatment, be it modern or traditional, he or she will be more apt to use it on a regular basis. Successful integration of medical pluralism will encourage the Maya to continue their current practices as well as provide safe options for their dedicated patients.

In Cosminsky's 1972 report, *Utilization of a Health Clinic in a Guatemalan Community*, she outlines seven "recommendations… for a more effective health program" (336-337). She begins with a proposal for educating more people, including patients, at health seminars. Next, she proposes that clinic personnel learn to speak a Mayan language and to learn more about the culture and cultural traditions that their patients come from. She also proposes to keep more detailed medical records of the patients. She requests more cooperation, communication, and collaboration between modern and traditional healers. Finally, she suggests greater political and less religious involvement in national medical programs.

Hurtado and Sáenz's suggestions for improving the training courses are also helpful. They note four fundamental tools for ensuring the attendance of the Mayan midwives (2001:225). Community outreach can have a great impact on midwives in more remote locations that do not get regular notices of training courses offered. Greater effort to recruit midwives might help them to organize better and attend the courses. The courses should provide the midwives with equipment and materials to continue their practice. Most importantly, the instructors must be able to speak the Mayan language of the group they are teaching. These and many other suggestions by the authors can help lead Guatemala to a more complete health system.

The same authors also point out "that the reason most pregnant women do not go to health service facilities is because they prefer and trust their midwives" (226). If this reason truly is hindering patient attendance at clinics and hospitals, then a logical solution might be to hire the midwives to work at the health facilities. If the midwives are brought to the clinics, then it is possible that their patients will follow them. Through sufficient training, education, and

compensation, the midwives can become competent in the modern medical setting while still safeguarding the loyalty of their patients and their culture. From my observations, it seems as though the midwives' patients trust them enough that if she invited them to come to the clinic where she worked then they would do so.

Future studies in Guatemala could consist of a modified adaptation of Plotkin's Shaman's Apprentice Program in the Brazilian Amazon rainforest. A program for recording and preserving Mayan medicinal knowledge might incorporate well into ASECSA's facilities. Although ASECSA provides medical training classes in Mayan languages, there is no succinct volume of work that records their practices in their own languages. Such a project would offer the Maya a complete written reference of their medicinal knowledge for themselves and for future generations to have throughout time. Without such a reference, as Plotkin claims, indigenous knowledge would eventually vanish over time.

Cosminsky stresses the need for further research on the medicinal values of the plants used by Mayan traditional healers. Although the Western medical system has condemned the illegitimate uses of herbal medicines, the motivation behind that is unsubstantial. "However, since some of these plants may have beneficial effects, investigation and analyses should be made of these herbs. The herbal knowledge is being gradually lost and the newly trained midwives are more familiar with patent medicines instead" (1982:219). Also, "Research focusing on these plants is needed, not only because it may provide us with new medical knowledge, but also because of the increasing possibility that both the knowledge and the source of that knowledge may be dying out" (2001c:270). Scientific validation of the effectiveness of herbal medicines will also give validation to the practices of traditional healers. Unfortunately,

most of the money available in medical sciences is used for research that will only profit the pharmaceutical industry.

Because today's traditional Mayan medical theory and practice itself may be a hybrid of cultural knowledge from local and Western tradition, it may speak to the important ability of the Maya to adapt to using new and different forms of medicine. While it would be very noble to offer indigenous people more medical options, it would be extremely inappropriate to impose a complete replacement of their traditional medical system. Mayan medical knowledge simultaneously represents both their culture's identity and history, and today may only be speckled with their ancient practices. Nonetheless, conserving the remainder of this knowledge can still prove to be invaluable. Without some form of structure to preserve and transmit traditional knowledge, an ancient culture could not have persisted into present times. Future work with the Maya can reinforce this structure to ensure that their knowledge holds on for generations to come.

APPENDIX

Interview Questions and Translations

1. ¿De dónde es Ud.? ¿Dónde vive ahora? (Where are you from? Where do you live now?)
2. ¿Cuál fue su nivel de estudio? (What was your level of education?)
3. ¿Cuál es su trabajo? ¿Cuánto es su sueldo? (What is you job? What is your salary?)
4. ¿Cuántas personas viven en su casa? (How many people live in your house?)
5. ¿Cuánto es el sueldo total de su casa? (How much is the total salary of your household?)
6. ¿Cuántos niños tiene Ud.? ¿Cuántos años tienen ellos? (How many children do you have? What are their ages?)
7. ¿Tiene Ud. propiedad de tierra? (Do you have ownership of land?)
8. ¿Le gusta a Ud. la medicina moderna química? (Do you like modern chemical medicine?)
9. ¿Le gusta a Ud. la medicina tradicional natural? (Do you like traditional natural medicine?)
10. ¿Cómo son sus menstruaciones? (How are your menstruations?)
11. ¿Cuántos años tenía Ud. cuando tuvo su primera menstruación? ¿Cuántos años tiene ahora? (How old were you when you had your first menstruation? How old are you now?)
12. ¿Normalmente son regulares sus menstruaciones? (Normally, are your menstruations regular?)
13. ¿Ha tenido cirugía, Ud. en el pasado? ¿Cuántas veces? (Have you had surgery in the past? How many times?)
14. ¿Cómo le parece a Ud. menstruación? How do you perceive menstruation?)
15. ¿Padece Ud. alguna enfermedad? (Do you suffer from an illness?)
16. ¿Hace ejercicios? ¿Cuántas veces? (Do you exercise? How many times?)
17. ¿Cuáles son algunos de sus síntomas durante su menstruación? (What are some of your symptoms during your menstruation?)
18. ¿Cómo se trata Ud. éstos síntomas? (How do you treat these symptoms?)
19. ¿Come Ud. algunas comidas específicamentes durante su menstruación? (Do you eat specific foods during menstruation?)
20. ¿Deja de comer (o evita) Ud. algunas comidas durante su menstruación? (Do you omit (or avoid) some foods during your menstruation?)
21. ¿Cuáles son las plantas que prefiere Ud. para tratar sus síntomas menstruales? (What are some plants that you prefer to treat your menstrual symptoms?)
22. ¿Cómo recibió Ud. el conocimiento de plantas medicinales? (How did you receive your knowledge of medicinal plats?)
23. ¿Cómo prepara Ud. éstas medicinas? (How do you prepare these medicines?)
24. ¿De dónde son éstas plantas? (Where are these plants from?)
25. ¿Algunas de éstas plantas sirven bien para embarazadas también? (Do some of these plants serve well for pregnancies also?)

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