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A Comparison of Healthcare between Nicaragua and the United States and the Feasibility of Naturopathic Medicine

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There are people standing everywhere fanning themselves to keep cool in the scorching sun, yet they are waiting patiently. Some look tired and defeated, while a zest for life is noticeable in others. I am approaching a public health center in a small rural town on the island of Ometepe, Nicaragua. A crying young boy cringes while his mother sprays cold water over him to help with his fever. Men and women in pain hold their parasite-consumed stomachs. For hours, twenty or more patients wait on the porch of the health center for their time with the doctor. It is difficult to imagine a lifestyle so dissimilar to that in the United States, but I had the chance to experience life in Nicaragua and learn about the current health system there. The battle over healthcare is a global concern that is being handled differently in each country. Health care is more accessible in Nicaragua than in the United States but the quality of care is much worse than in the U.S. hospitals.

The current Nicaraguan President, Daniel Ortega, is focusing on improving health care quality; however, that was not always the case. Anastasio Somoza Debayle assumed power in 1967 and plunged Nicaragua into a financial devastation that the country still struggles to improve. When a devastating earthquake took 20,000 lives in 1972, Somoza Debayle stole international relief money and sold donated emergency items on the black market. Barely enough money was left to keep the country afloat for two days. Somoza Debayle ordered the assassination of the publisher of the popular opposition paper, *La Prensa*, sparking a war of liberation. The country became involved in a revolution in order to force Somoza Debayle out of office. July 1979 saw the end of this revolution with a Sandinista government triumph (Evans 36-43). The revolution marked another devastating loss for the country. Fifty thousand more

Nicaraguans were left dead, 100,000 injured, and 40,000 children orphaned. In addition, Somoza Debayle left behind a foreign debt of 1.6 billion dollars (Petrack 523-525).

The outlook on healthcare was dismal as well. The revolution left 92% of the rural population without potable water and only 10% received adequate medical care. Life expectancy was 52.9 years and 90% of the medical care was directed at ten percent of the population. Mortality was as high as 120-140 deaths per one thousand infants. Easily preventable health problems were the most common causes of death: bacterial diarrheas, tetanus, measles, whooping cough, and malaria (Halperin and Garfield 388-92). Remarkable improvements were made after Sandinista President, Daniel Ortega, came to power.

Ortega worked on reorganizing the health care system by combining functions of the Ministry of Health with the Nicaraguan Social Security Institute in order to increase availability and quality of care. Spending on healthcare increased by 200%, improving access. The government set up multiple health campaigns, starting with a literacy campaign to promote health education. Volunteers taught the 52 percent of illiterate individuals how to read, write, and understand health information; thus, reducing the illiteracy rate to 12 percent of the population. Mass vaccination campaigns for children started in early 1981. The largest campaign, aimed against malaria, involved 80,000 volunteers distributing anti-malarial drugs to the country. The operation reached 75% of the population and a 98% decline in malarial cases was observed during the next month. Diarrhea is a severe problem, especially in the rural regions of Nicaragua. The Sandinista government set up oral-rehydration centers across the country at which an electrolyte and glucose solution could orally be given to sick children. Over the first two years, 92,000 children were treated at the 226 centers. If it had not been for

educating the mothers and offering these centers as a treatment option, thousands of children would have gone without care and most likely died from treatable diarrheal sickness (Halperin and Garfield 388-92). Organizing the health system into tiers was the biggest change that Ortega oversaw.

The Sandinista government set up a three-tier health system comprised of private care facilities, social security centers, and public clinics. Wealthy citizens paying for their own care attend private hospitals located in metropolitan areas of Nicaragua. Comparable to United States hospitals, these are well equipped and sufficiently staffed (Angel-Urdinola, Cortez and Tanabe). Money is earmarked for developing technology and improving medical supplies. Private health care is unattainable for much of the Nicaraguan population though. Medical consultations start at twenty dollars, laboratory tests and x-rays are two to three dollars each, and prenatal checkups cost one hundred dollars. While this amount may seem minimal to a person living in the United States, the typical Nicaraguan makes less than fifty dollars per month (Lane 580-582). Therefore, families are forced to choose between paying for health care or food. The Social Security Institute (SSI) provides medical care to salaried workers in government and industry positions that make up 8% of the population. Although this is a very small minority in the community, this group receives 40-50% of the national health care budget from the government. In 2007, an insurance program was offered to informal sector workers that paralleled the SSI program. The monthly fee was fifteen dollars, a costly investment for the less fortunate population. Average total medical expenses for the year ended up being considerably less than the insurance premiums for most individuals; consequently, they were unwilling to pay for health insurance. Designing insurance packages that will be affordable, yet

provide high quality care for informal sector workers is necessary in the future (Thornton *et al*. 181-206). Despite the low population percentage receiving care under the SSI, the budget spent on their care remains high. On the other hand, only 16% of the budget is spent on public centers attended by 90% of the population (Merrill 77-8).

Public centers found in rural areas are only able to care for simple illnesses and minor injuries. Medical care is free of charge, although the quality of care is compromised due to a lack of running water and sanitation. Because these clinics receive a small sum of the budget, equipment and staff are limited. Latex gloves are sterilized and reused, a practice that may put many patients and health care workers in danger of acquiring infections, especially after the AIDS epidemic (Angel-Urdinola, Cortez and Tanabe). As free care is the sole option for most Nicaraguans, travelling far distances and waiting in long lines to see a doctor is to be expected. Travelling is an inconvenience that is time consuming, expensive and may even put lives in danger. Most citizens must walk or ride dirty buses to the clinics. In times of emergency patients may not make it to the clinic. Sanitation can prove to be problematic if a patient has an open wound. Nevertheless, the free clinics are the only option for a great deal of the population, especially those that live in rural areas. It is estimated that 45.8% of Nicaraguans live below the national poverty level and 17.2% of the population is in extreme poverty (Ross e9-12). In part, poverty is high because 39% of the population is under fifteen years of age ("Country Cooperation Strategy at a glance"). For the citizens earning only $300-600 annually, the public clinics remain in high demand. In fact, so many people wait in line for care, there is always a shortage of doctors, nurses, and supplies. A volunteer witnessed these conditions firsthand, “There are perpetual shortages of the most basic supplies: no insulin in the hospital;

bulb syringes for newborns are reused and were found to be a source of infection; and one clinic had run out of charts. Working conditions are difficult at best…We saw a medical student perform his first Pap test on a patient without supervision" (Kugel 48-49). Nicaraguans with illnesses from back pain to stomach parasites patiently wait in hopes of a cure for their ailments. Painkillers and probiotics are the usual treatments for these individuals (Mendenhall). Maintaining medication is often difficult, though, because of the intense heat and damp conditions. Makeshift containers such as paper, bottle caps, cans, and envelopes contribute to loss or spoilage of medicine (D'Arcy 982-4). Nevertheless, medication is free unless it is out of stock, in which case the patients are sent to purchase it elsewhere. Few follow up on the purchase of these medications because of the cost.

In addition to the financial burden of quality care and medication, the lifestyle in Nicaragua plays a major role in personal well-being. Hard labor, sanitation, and lack of food choices are among the leading causes of illness and disease contributing to the low life expectancy of 66 years for males and 71 years for females. Moreover, life expectancy is 10 years less in rural areas (Ross e9-12). Manual labor in the field causes tremendous damage on men's bodies and hours of cooking is harmful to women. Many natives develop severe body pain as a result of ten or more hours of physical labor every day. Musculoskeletal complaints are most common in the adults, while parasitic infections are common in children. Unsanitary conditions from dirty water give rise to intestinal diseases. Housing consists of tin roofs, cement slab walls, and dirt floors. Dogs and chickens are free to roam in and out of the house and animal waste often ends up in the small streams. Cooking supplies and utensils are limited, hence sharing leads to rapid spread of diseases (Ross e9-12). In addition to sanitary issues,

most Nicaraguans make their own cheese and supply their own milk but do not pasteurize these food items. Refrigerators are a luxury and depend upon working electricity to keep the food from spoiling. Lack of refrigeration causes bacterial infections in many. High-sugar, low-vegetable diets are eaten by most Nicaraguans because of their meager income. Beans, rice, and fruit are dietary staples. Meat is usually saved for special occasions. Consequently, malnutrition is a common problem that frequently leads to diabetes and hypertension (De Chesnay).

For the 47.9% of the Nicaraguan population living under the poverty level, infectious disease is a primary health issue (D'Arcy 982-4). According to the government, there is "no AIDS crisis" in Nicaragua since only 0.2% of the people are infected. Out of those with the disease, just 10% are receiving medical treatment because funding for medication is not available. The drugs are extremely expensive, costing about $1400 per person every year, making it impossible for Nicaraguans to afford considering their average daily income is one to two dollars (Wheeler *et al*. 853-860). Additionally, testing for the disease and effects in those receiving treatment is a rarity due to the added expense. A cost analysis study was conducted in Nicaragua on viral load testing for antiretroviral therapy (ART). The viral load test monitors viral suppression due to ART. National regulations state that testing should occur every six months; however, the only testing center was in the capital, Managua, and testing is quite expensive. The study found that total costs per test ranged from $99.01 to $124.58 with up to $14.93 of that coming from patients' pockets. The test results took between 15 and 60 days to deliver, significantly decreasing their usefulness in treatment decisions. The costs and inconveniences are considerable burdens for patients living in poverty (Gerlach *et al*. 43).

Since focus cannot be on AIDS treatment in Nicaragua doctors are now working on enhancing education and prevention of the disease with the use of condoms and early symptom identification.

The high level of poverty and malnutrition in Nicaragua results in inadequate prenatal and maternal care. Most pregnant women do not have the money to eat nutritiously and do not see the doctor throughout pregnancy. Without the necessary vitamins, such as folic acid, birth defects and birth complications may arise. Among the rich, doctors deliver 95% of babies, while only 56% are tended by doctors for the poor. The rest are delivered by untrained midwives using little equipment and so emergencies cannot safely be resolved (Angel-Urdinola, Cortez and Tanabe). In rural areas, 55% of women give birth in their home, creating potentially dangerous situations ("Country Cooperation Strategy at a glance"). In fact, when problems occur during the birthing process on the rural island of Ometepe, the woman must be transported off the island to a larger hospital in the metropolitan area. The long and rough trip does not yield many survivors and those that do make it are unable to pay their medical bills. Respiratory diseases, neonatal sepsis, congenital malformations, infections, birth asphyxia, birth injuries, preterm births, and diarrheal diseases are among the most common causes of prenatal mortality ("Country Cooperation Strategy at a glance"). Maternal mortality is the result of hemorrhage, sepsis, unsafe abortion, eclampsia, and obstructed labor. Most of these conditions can be prevented with timely ultrasound imaging. Compact ultrasound units have been donated to developing countries where technology is unaffordable. The units are highly portable and health care workers can be trained to use the machines within in a relatively short period. The new models are still quite expensive, though refurbished first-generation units can

be purchased for less than $5,000. This is still too expensive in Nicaragua so donations are the only way to obtain the ultrasound machines (Harris and Marks 1067-1076). Even without emerging technology, the mortality rates have been reduced. In 2000, the Ministry of Health started the Quality Assurance Program, which set standards for prenatal care and trained staff. Fetal measurements taken throughout pregnancy and maternal education on substances to avoid were among the monitored improvements that led to decreased mortality rates (Lin *et al.*). Since 1979, infant mortality rate decreased from 120 per 1,000 to 25 per 1,000 live births today (). Maternal mortality rate is 88.2 per 100,000 births and still demonstrates the need for improvement ("Country Cooperation Strategy at a glance").

Nicaragua is advancing health care to better fit the needs of the citizens by educating patients, encouraging donations of money and supplies from other countries, and using sustainable methods of medicine. Starting after the Sandinista government came to power, many organizations such as the United Nations International Children's Emergency Fund, the World Health Organization, the Organization of the American States, and the European Economic Community have provided extensive aid. More help has come from Sweden, Norway, Austria, Belgium, and Italy. A hospital set up in north Nicaragua was a donation from West Germany (Halperin and Garfield 388-92). In 1983, the United States brought $60,000 worth of medical equipment, books, and journals to Nicaragua (Petrack 523-525). The U.S. has continued to provide aid, mostly through private organizations, personal donations, and volunteering. Ongoing shortages of medicine and basic equipment remain so citizens make the most of what they have available. Naturopathic medicine is becoming increasingly popular because the use of plants provided by field workers as medicine is inexpensive and practical.

Familiarity with agriculture allows locals to work with doctors in finding new drugs. As a result, Nicaraguans are very comfortable with this type of affordable medicine, encouraging more people to seek treatment (Parker). Natural Doctors International (NDI) is an organization that founded a naturopathic health clinic in the town of Los Angeles on Ometepe Island, Nicaragua. The clinic has provided more than $200,000 worth of free medication and naturopathic care to over 13,000 patients since it opened in 2005 (Parker).

Naturopathy is built on the idea that the body has an innate healing capacity. This principle guides primary care medicine focusing on disease prevention and individual responsibility. There are six principles of naturopathic medicine: the healing power of nature (body's innate capacity), identify and treat the causes not symptoms, do no harm by using the least invasive interventions, educate patients in steps to achieve and maintain health, treat the whole person (physical, emotional, mental, etc.), and prevention (Fleming and Gutknecht 119-136). Treatment involves a variety of techniques including acupuncture, botanical medicine, clinical nutrition, homeopathy, hydrotherapy, counseling, and naturopathic manipulation. Encouraging the body to heal itself in the least invasive manner is the main goal. Acupuncture is an oriental treatment that harmonizes the imbalances caused by a diseased state. Fine needles are inserted into the skin at various points on the body. There are 365 points along twelve major and eight extra channels, in addition to over 1000 points on the hands, ears, and scalp that have specialized functions. Needle insertion is important in obtaining the proper flow of Qi, or energy coursing through an organism, and blood (Zunin *et al*. 7). Botanical (herbal) sources are extremely important in developing countries. Nicaraguans find these plants in their backyards; thus, accessibility is high and cost is low. Teas, tinctures, balms, baths, oils, syrups,

suppositories, and capsules can be derived from the herbs (Fleming and Gutknecht 119-136). Nutrition influences overall health, as does counseling. Homeopathy is based on the idea that "like cures like" and acts to strengthen the body's immune response by causing subtle symptoms similar to the disease being treated. By increasing blood flow to the skin and internal organs, the body is stimulated to heal and recover from many illnesses. This practice is called hydrotherapy and is achieved by using water to change bodily temperature. Naturopathic manipulation is another beneficial practice that does not require many outside resources. Musculoskeletal problems can be treated by physical manipulation (exercise, massage) ("Naturopathic Medicine and Natural Herbal Remedies"). Adults in Nicaragua have chronic musculoskeletal pain because of their laborious lifestyle. Acupuncture and manipulation prove to be valuable treatment methods in reducing the immediate problem and the chronic nature of the pain.

There are a vast number of plants used for treatment in Nicaragua. One native has been making mixtures for as long as she can remember. She uses basil tea to treat headaches and nervousness and a complex tincture of many herbs for anemia, insomnia, and loss of appetite. Whenever her children come to her with a complaint, she knows exactly what to combine to treat the ailment. This knowledge has been passed down from her ancestors and other agricultural locals (Parker). Dried orchid uses range from boosting the immune system to eyesight improvement to cancer treatment ("Orchid Medicine"). Brazillian cherry trees, or Guapinol, are widespread in Nicaragua and gum from the bark acts as treatment for type II diabetes, respiratory problems, and fungal infections, all of which are common health issues in the country (*Medicinal Plants and Culinary Heaven at the Ark Herb Farm*). Musculoskeletal

problems, fatigue, headache, anxiety/depression, bowel and abdominal problems, allergies, and rash are the main reasons people visit naturopaths. Nicaraguans experience at least one of these problems on a daily basis, making naturopathy a resourceful and valuable treatment option.

Besides cost and accessibility, naturopathy offers many other benefits. Naturopathic doctors (ND) take a lot of time to get to know each patient with an initial visit lasting between one and two hours and subsequent visits lasting 30-60 minutes ("American Association of Naturopathic Physicians"). At the first visit, the ND conducts a thorough interview regarding the patient's pain, diet, stress, family health, environmental issues, relationships, and other lifestyle factors. NDs want to know everything that makes up a person and how one's health is affected. Patients feel that NDs listen and understand their problems; in contrast, general practitioners usually spend less than 15 minutes with each patient. While pharmaceuticals reduce symptoms of chronic ailments, naturopathy focuses on the cause and results in long-term solutions. It helps one reach and maintain a higher level of fitness and increases energy. Reducing stress, quick recovery from colds and other illnesses, and maintaining a balance between physical and emotional states are among other advantages. One of the most important aspects of using natural medicines instead of pharmaceuticals is the ability to address many issues with one substance while reducing the number of toxic side effects. Because botanicals are organic, they are more compatible with the body's chemistry and exposure to the plants for millions of years has enabled the body to develop metabolic pathways to utilize and detoxify these agents ("Naturopathic Medicine and Natural Herbal Remedies"). Among the rural population in Nicaragua, natural therapies are common because

of easy access to the plants and comfort in knowing they were discovered by their ancestors. The rural inhabitants are proud and want to take care of themselves. Naturopathy teaches them how to do this and become informed, active members of their health care. Wardle *et al*. stated "I don't think they're [country people] exposed to as much of the negativity as city people…you know they're not bombarded with media or advertising so they have to make up their own minds" (Wardle, Adams and Lui 185). People that are used to medical practice based on pharmaceuticals, as we are in the United States, are unsure about the efficacy of naturopathic medicine. There is not much scientific evidence as to its effectiveness, but it has proved to be successful in many other nations. Slowly, it is gaining higher acceptance, although there is a still a long way to go.

Naturopathic medicine falls under the category of complementary and alternative medicine (CAM) in the U.S. Between 1990 and 1997, CAM use increased 47% in the U.S. and according to a federal survey, four in ten adults and one in nine children utilize CAM. When comparing CAM to conventional care, it was found that people prefer CAM for back conditions, fatigue, neck conditions, and strains/sprains, but not for high blood pressure. This makes sense because the conditions for which CAM is preferred are all chronic and as said before, naturopathy finds the root of these problems and treats it. Most often, conventional therapy is still chosen over naturopathic medicine because of apprehension about its effects. However, instead of viewing these therapies as alternates, they should be viewed as complementary. A combination of CAM (naturopathy) and conventional medicine is believed to be superior to either by itself by 79% of people. In the U.S. adults seek CAM treatment for back or neck pain, joint pain or stiffness, arthritis, headaches, and sprains or strains. Back or neck pain, head or

chest colds, anxiety or stress, and attention-deficit or hyperactivity disorders are the conditions for which children use CAM. Many of these situations are effectively treated by naturopathy in Nicaragua, so they should be just as effective in the U.S. Nonetheless, most people that use CAM still seek conventional therapy first ("Naturopathy Digest."). The majority of CAM practitioners feel as though medical doctors (MDs) perceive their practice as unscientific and useless. The future of healthcare resides in the cooperation between mainstream health care and CAM. Both fields are worried that they will lose control over their practice; however, working together will simply enhance each type of therapy (Wiese and Oster 415-433). The majority of medical schools are beginning to offer some type of CAM education, which is a step in the right direction. Relationships need to continue to be built between the indigenous communities that developed naturopathy, CAM professionals, and mainstream institutions. By combining allopathic, osteopathic, and naturopathic medicine, healthcare will gain strength and the increased ability to heal every ailment in the safest and most individualized way possible.

Higher quality of care but lower accessibility results in a completely different system of health care in the United States. Citizens may have health insurance, which covers the cost of treatment and medication. These individuals attend hospitals that are sufficiently funded, making them technologically advanced, well staffed, and sanitary. Hospitals in the United States enforce strict rules and regulations that safe health care depends on. Needles are not reused and all workers must wear disposable gloves to prevent the spread of diseases. Each room and piece of equipment is disinfected between patients. Treatment is personalized because a large variety of medication are readily available and paid for by insurance. Alternatively, 45.7 million Americans are without medical insurance and must pay for care out

of pocket (Singer). Cost of insurance has increased by 78% since 2001, while wages have only increased by 19%, making it difficult for many to maintain coverage. Overall, health care cost has also increased substantially, forcing those with no insurance to go without medical care. Some may regularly attend the emergency room but later experience trouble paying their bills. About 1,200 free clinics nationwide give the uninsured population an alternative to care. Founded in 2001 by the National Association of Free Clinics, these volunteer based centers offer care to those that cannot afford it. However, there are not enough clinics available for everyone to attend without travelling long distances (*The National Association of Free Clinics*).

Preventative care, sanitation, food choices, and sedentary lifestyle change health care needs in the United States. Americans are encouraged to visit the doctor yearly for preventative care and early detection of diseases. Sanitation both at home and in hospitals means that parasitic and bacterial infections occur less frequently than in Nicaragua. Cardiovascular disease, obesity, cancer and STDs are much more common in the U.S. Despite the variety of foods available, many Americans make poor food choices leading to obesity and eventually heart disease. Office jobs rather than fieldwork make sedentary lifestyle widespread and problematic. Pollution, artificial food additives, smoking, and alcohol are all possible contributors to cancer that Americans are exposed to every day. Much money is put toward medical research in this country; hence, new drugs are being developed and marketed to help cure these diseases. Life expectancy is 78 years old and rising in the United States (*The National Association of Free Clinics*). Antiretroviral treatments are constantly being improved and made available for the 1.2 million Americans infected with HIV/AIDS. Because a lot of money is granted to the AIDS crisis in the United States, many of those with the disease are being

treated. Testing is prevalent and education about transmission of the disease is being taught in more communities.

The advanced health care system in the United States provides superior prenatal and maternal care as well. Doctors are present for the delivery and women receive many checkups throughout pregnancy. Ultrasounds, uterine measurements, fetal heart rate measurements, screening, and protein and sugar level tests are preformed to ensure the health of the baby. Caffeine, alcohol, and tobacco avoidance is stressed so that the baby remains healthy. Recommended dietary guidelines and further education about prenatal care is offered ("Prenatal Medical Care"). Modern equipment puts the mother at ease, knowing that the doctors can control most complications that may arise during delivery. Maternal mortality rate is as low as 17 per 100,000 live births and infant mortality rate is 8.2 per 1,000 live births (Rosling, Rosling and Rosling Rönnlund). A combination of care during pregnancy and proper equipment for delivery make mortality rates low.

U.S. President Barack Obama is currently working on health care reform proposals that call for universal health care for all. The Stability and Security for All Americans Plan states “It will provide more security and stability to those who have health insurance. It will provide insurance to those who don’t. And it will lower the cost of health care for our families, our businesses, and our government.” The Affordable Care Act declares that insurance companies will not be able to drop coverage when people get sick and out of pocket expenses will be capped so people do not go broke paying for care. Nearly 10,700 people are dropped from their insurance each year due to sickness or a simple application mistake. The reform prohibits this action and bans lifetime limits on the amount of coverage available. Cancer patients and

individuals with other chronic diseases will benefit from this change. Another provision helps cover young adults by keeping them on their parent's plan until they are 26 years of age or offered coverage from work. An insurance marketplace will be created under the plan that allows people to compare plans and buy them at rates. The uninsured population will have a public health insurance option that is affordable. The reform is taking place from now until 2014 and will eventually expand coverage to 32 million Americans. Focus on preventative medicine will be beneficial in reducing costs and improving health. In the past, insurance did not cover prevention because it was not a necessary medical action. The new law requires insurers to pay the full cost of recommended preventative services. By covering prevention, expensive and serious health problems may be avoided in the future. Obama insists that the plan will not add to the deficit and taxes will not be increased to pay for it. Not only will the Affordable Care Act reduce costs for families and businesses, it is estimated that it will reduce the deficit by over $100 billion over the next ten years and over $1 trillion the following decade (Obama).

Health care in Nicaragua varies vastly to that in the United States, mostly due to lifestyle and socioeconomic differences. Widespread free public clinics in Nicaragua make accessibility to care better; however, overall health care is underdeveloped so even though it is available, the quality of care is poor. In the U.S., uninsured people do not have free clinics as readily available so they struggle to pay for care. There is clearly a link between the economic status of people in both countries and their inability to afford adequate health care. For those that can pay for medical treatment in the U.S., increased sanitation, superior medical equipment, and better food choices decrease the prevalence of infectious disease and bacterial infections.

Instead, the sedentary lifestyle leads to more cardiovascular disease and obesity. Necessary improvements are being made in both countries, by increasing the use of natural resources in Nicaragua, and expanding health care access in the United States.

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Website also developed:

www.nicaraguahealthcare.webs.com