

Complementary and Alternative Medicine Usage across Nations (June 2014)

Jessica Asaro, BSN, RN, Saginaw Valley State University

Abstract— Between 2000-2010, the Asian population grew the most in America, increasing by 43%. It is important for health care workers to be able to provide culturally sensitive care to individuals of different ethnic backgrounds, such as Asians, who may be either Hindu or Buddhist. Many times, these individuals are more comfortable utilizing Complementary and Alternative Medicine (CAM) for treatment before exploring Western treatment. CAM will be described in detail within the body of this paper. The differences in not only health care systems between Indonesia, Nepal, and the United States, but also CAM usage among the three countries will be discussed. Advantages and disadvantages in relation to CAM usage will be addressed as well as implications for nurses who are looking to widen their scope of practice.

Keywords—alternative medicine, complementary medicine, international healthcare.

I. INTRODUCTION

Each year, America is becoming more and more diverse due to the immigration of citizens from other parts of the world. This increase in diversity has resulted in values and beliefs amongst Americans to also become more diverse. Within different unique values and beliefs systems are also unique ideas on the level and type of health care expected by different cultures. According to the US census bureau, between 2000 and 2010, the Asian population grew the most in the United States, increasing from 10.2 million to 14.7 million, a 43% incline [1]. This paper will combine the knowledge learned about health care in general, and the use of CAM specifically, gained during study abroad trips to Indonesia (2011) and Nepal (2013) in order to develop guidelines on how a nurse could best care for people with different belief systems including those with Hindu and Buddhist backgrounds, from Asian cultures.

II. OVERVIEW OF THE HEALTH CARE SYSTEMS OF THE THREE COUNTRIES

A. Indonesia

Health care systems vary widely across the world. In

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J. I. Asaro is with Saginaw Valley State University, University Center, MI, 48710 USA (phone: 586-907-7715; e-mail: jiasaro@svsu.edu).

Indonesia, there are several different levels of health care available depending on the patient's economic class. There are different levels of organization for health care in Indonesia, beginning with village midwives clinics on the first level. These clinics typically provide obstetric services to about 300 females or one village which does not have other health services. The midwives in village clinics work in a building with obstetric facilities where they are provided with a residence and a small salary. Next, there are puslings which are mobile health services. A pusling can be a motorcycle, car, or boat, and has communication equipment. In remote areas, a pusling replaces the function of puskesmas or pustus. Pustus are the next level of health care provided in Indonesia. They are simple health service units that work under the management of a puskesmas and cover two to three villages which is about 2,000 to 3,000 people. These units are run by nurses and are an integral part of puskesmas. Puskesmas are the main part of the health system, characterized by heavy reliance on health workers, not just physicians. Puskesmas at the community level provide comprehensive health services. These puskesmas typically provide health services to 30,000 people. Puskesmas located within the community help build participation within the community while providing integrated services to its people. Puskesmas are supported by pustus, puslings, and village midwives clinics. The government in Indonesia has focused on increasing availability of health care to its people by giving priority to the construction of new puskesmas as well as increasing community access to services through auxiliary health centers, or putsus. Public and private hospitals are used next in Indonesia. Public hospitals are run by the Ministry of Health or by local authorities. Public hospitals are classified as: Class A & B (major referral and teaching hospitals), Class C (100-400 beds, some specialist services and/or teaching hospital) or Class D (25-100 beds, only general practitioner doctors). Following the Jaring Pengaman Sosial Bidang Kesehatan (JPSBK) provision, all hospitals and community health facilities provide free medical, nursing, and hospital care as well as supplies needed for treatment to those who are in great need financially. JPSBK is only offered to those of the poorest class. Private hospitals consist of about 34% of the hospitals in the country. The middle class and some of the upper class are able to afford to seek treatment at private hospitals. The quality of care in private hospitals is not always greater than the quality of care in public hospitals; it is dependent on the size of the hospital and the type of resources they have to care for

patients [2].

B. Nepal

The health care system in Nepal is divided into two main branches: a traditional health care system (including CAM) and a modern (Western) health care system. The traditional health care system includes ayurveda, homeopathy, naturopathy, and medicine which is passed down through generation by word of mouth. The modern health care system in Nepal consists of divisions, centers, and regional health services. Divisions include planning and foreign aid, family health, child health, epidemiology and disease control, logistic management and leprosy control. Centers include the national health training center, the national health education, information, and communication center, the national tuberculosis center, the national center for AIDS and STD control, and the national public health laboratory. Regional health services include regional hospitals, regional training centers, regional health laboratories, regional medical stores, and regional tuberculosis centers. At the next level, there are zonal hospitals. Next is the district level of health care which is divided into the district public health office, district hospitals, and the district health office. Then, there is the electoral constituency level which is the primary health center. Health posts are divided into sub-health posts (which is the VDC level). Finally, at the community level, there are female community health volunteers, traditional birth attendants, primary health care outreach programs, and expanded programs on immunizations. The public sector is what the majority of the population including the lower class uses. The private sector, on the other hand, includes private hospitals, which is what the upper class and higher caste system primarily use for health care [3].

C. United States

The United States primarily uses a logical approach when identifying the cause of disease. When an American visits the doctor with symptoms of disease, they may have blood work drawn or x-rays taken to accurately diagnose a disease. The primary health care provider will also use subjective results such as the symptoms the patient describes, when diagnosing disease. Once a disease is diagnosed, a treatment is prescribed for the patient to alleviate symptoms [4].

United States health care also stresses the prevention of disease. Precautions that western medical providers believe prevent disease include exercise, healthy diet, routine screening and checkups, hygiene, immunizations and public sanitation [4].

Health care in the United States is broken down into multiple levels of health care to provide customers with the type of health care that will benefit the individual the most. Primary care is the care Americans seek for most illnesses, injuries, annual checkups, and preventative health care. Specialized care is sought by Americans usually when they have either a chronic illness that requires specialized treatment or when their primary health care provider refers a patient to a specialist because treatment would be out of their scope of practice. Examples of specialists include dermatologists, gynecologists, physical therapists, and orthopedic physicians.

Urgent care is another level of health care that is sought when a person needs medical care that cannot wait until the next appointment with their primary health care physician. It is not an emergency, but could potentially be life-threatening if prolonged. Emergency care is used for life-threatening problems such as serious traumatic injuries (car accidents), heart attacks, burns, or poisoning. Finally, inpatient and outpatient hospitalization are used in America for those seeking western treatment. Inpatient hospitalization includes surgery, mental health services, pediatric services, childbirth services, and rehabilitation for those recovering from major trauma or surgery. Outpatient care can be x-rays, minor surgeries, outpatient rehabilitation services, and radiological testing such as CT scans, MRIs, or x-rays [4].

III. COMPLEMENTARY VS. ALTERNATIVE MEDICINE

Complementary medicine describes the utilization of a non-mainstream approach to seek health care in combination with conventional (Western) treatment. For example, one may take vitamins such as fish oil and omega-3 fatty acids along with taking the drugs prescribed for a medical illness by their primary health care provider. Alternative medicine is a varied form of medicine used *instead* of conventional forms of diagnosis/treatment. An example of alternative medicine could be the use of a chiropractor for lumbar pain. Whereas complementary forms of treatment can be used as a form of alternative medicine if it is not used along with another type of treatment, alternative forms of treatment completely replace conventional methods of treatment and diagnosis [5].

CAM includes both types of medicine: Complementary and Alternative, so the term CAM is used when referring to both of these medicinal practices. According to *Disease Control Priorities in Developing Countries*, there are five different domains that somewhat overlap with each other within the term CAM. Biologically based practices include vitamin and mineral supplements, herbs and spices, natural products, and unconventional diets. Manipulative and body-based approaches are used when different parts of the body are moved or manipulated and include different forms of massage like deep tissue as well as different disciplinary massages like chiropractic and osteopathic [6], [7]. Mind-body medicine is another category which includes many different techniques incorporating the spiritual, meditative, and relaxation parts of a person. Mind-body medicine, for example yoga, strives to achieve the correct balance of the body systems by enhancing the mind's ability to affect body functions [6]. Alternative medical systems is the fourth category wherein lies the idea that health requires a balance of the vital humors as well as a good flow of the vital energies through the body. Acupuncture, a treatment where fine needles are inserted into specific points found on the human body based on the anatomy, physiology, pathology, and the principles of evidenced based material, is found within this category [7], [8]. The insertion of these needles helps to correct the imbalance of energy which is present at each specific point on the human body [9]. Energy medicine is the last domain that makes up CAM. Energy medicine uses therapies that involve

the use of biofield or bioelectromagnetic-based energy for treatment [7]. Therapeutic touch (TT) is a form of biofield treatment in which the practitioner helps to heal the patient by transferring energy from his or her own hands and fingertips to the patient's body without physically touching the patient. While doing so, the practitioner familiarizes herself with the condition that the patient is in, which enhances her ability to heal. Common uses in which TT is used as treatment include: stress reduction, anxiety, chronic or acute pain relief, and wound healing [10]. CAM is used to treat any combination of the physiological, psychological, and spiritual needs of a person [11].

IV. CAM IN INDONESIA

According to the World Health Organization (WHO) in 2001, 40% of the population in Indonesia used Complementary and Alternative Medicine, increasing to 70% of the population in rural areas. The different types of CAM practitioners in Indonesia include herbalists, skilled practitioners, spiritualists, and supernaturalists. About 96% of these practitioners in Indonesia use CAM as a main method of treatment. In 1995 in Indonesia, there were 281,492 practitioners that practiced Complementary and Alternative Medicine. 27.2% were skilled CAM practitioners, 5% were herbalists, 4.4% were spiritualists, and 3.6% were supernaturalists. The remaining practitioners included in these numbers were traditional (Indonesian) birth attendants as well as other Indonesian specialties [12].

Herbal practices include ayurvedic medicine as discussed later in CAM in Nepal. Ayurvedic medicine is used across many Asian cultures.

Skilled CAM practitioners include those who are educated to offer Complementary and Alternative Medicine. These practitioners are either educated formally at a university or medical school, or are educated by their elder family members who have passed down the skills orally from generation to generation, which may be referred to as, "folk medicine". This includes but is not limited to: Shamans, masseuses, therapeutic touch healers, spiritualists, and Amchis [13].

During our visit to Indonesia, we were able to speak with a therapeutic touch healer, a massage therapist, and a spiritualist/palmist. Jero Pura was the TT healer we saw. To heal, she and her patient would first go into the temple and pray. Then, they would come into the treatment area and Jero Pura would manipulate her hands over the person's body as she prayed. We had a question and answer session with her after we saw her heal a couple of patients, and after speaking with her, we learned that the majority of the village relies solely on her for treatment. For example, if somebody were to break a bone, they would first visit her to determine what kind of healing should be sought, and if the break had been due to black magic or demons cast upon the patient.

We were also able to see a massage therapist treating members of the village via manipulation of the muscles. To treat, he would massage either the group of muscles that was feeling pain, or would massage pressure points in the body that refer pain to other areas. It was from him that we learned

that payment is flexible, meaning that if a patient could not afford to pay in Rupiah, they could exchange treatment services for something they could better afford, perhaps a chicken. They could also exchange treatment for manual labor.

Lastly, we visited Ketut Liyer, a palmist who was famous in Indonesia but become famous worldwide due to the movie, *Eat, Pray, Love*. We watched Ketut read the palms of members of our group. Before reading the palms, Ketut would first assess the facial characteristics of each patient including the ears, nose, lips, chin, and cheek bones, while asking questions about the patient such as, "Do you study?", "Do you have a boyfriend?", and "How old are you?" While reading the palms, he would point out the "life line" on each person's palms, which indicates the age a person will live to be. He would predict our futures in other ways as well.

Spiritualists are known in Indonesia as those who offer their master spiritual services to those ridden with disease requesting these services. The term "spiritualitas" has been adopted by many religious groups as the term used to express an inner dimension of the religion. Particularly in Indonesia, spiritualists are believed to have supernatural powers capable of healing the sick [14]. For example, a spiritualist may use energy fields to rid a client of black magic that has been negatively affecting their daily life, similar to a TT practitioner.

Supernaturalists are those who cure using powers that extend beyond natural powers [15]. This type of healing is when spiritual means are used in addition to or instead of conventional medicine to prevent or cure illness, as well as to improve the overall health of an individual. Spiritual healing may be used in place of or along with conventional medicine and is based on claims or revelations rather than statistical evidence. Many supernatural healing methods are based on the idea that symptoms expressed when a person is "sick" are a manifestation of disturbances in some nonphysical component of the person. Practitioners who attempt to heal by prayer are believed to be able to summon divine intervention on behalf of the sick and are usually highly respected within Asian countries, unless they are being thought of as using their powers to do harm on others. However, in cultures where Western medicine is mostly used, spiritual healing remains controversial due to the lack of statistical evidence for efficacy as well as a general confusion about what exactly the healing entails [9].

It is also important to note that in the Indonesian culture, people believe in the idea of good and evil. This means that if something is not good, it is evil; there is not a gray area in between the good and evil. For example, in many temples throughout the homes of Indonesians, there would be black and white checkered flags or cloths placed in sacred areas. While some may think that the colors of the cloths add to the decoration of the temple, there is a very delicate meaning to the clothes being black and white. White represents the good and pure spirits while black represents the evil bad spirits. Indonesians displaying these cloths believed that an equal balance of the good and evil spirits keeps the family in good

karma.

V. CAM IN NEPAL

Complementary and Alternative Medicine (CAM) is used by about 80% of the population in Nepal due to family pressure, financial concerns, availability of other forms of medication, and community opinion [16]. In other words, CAM is accepted, easily accessed, and less costly than traditional forms of medicine.

The most common form of CAM used in Nepal is ayurveda, as it is the national medical system [12]. According to the WHO, there are 141 stores where ayurvedic treatments can be distributed, 14 zonal dispensaries, 15 district ayurvedic health centers, and two ayurvedic hospitals in Nepal. Ayurveda is a culturally based health care system which uses nature, including roots and herbs, to heal ailments or to prevent disease processes from occurring. However, the primary emphasis for ayurveda is to prevent sickness. Ayurveda has been used as an ancient art of healing since the Vedic period (1500-800 BC) across the world [13]. The tridosha theory applies to ayurvedic care: that the body is made up of five elements: air, space, fire, water, and earth. To maintain good health, a balance must be kept where one must have proper proportions of food related to each of the five elements. It is also important for those practicing ayurvedic medicine to maintain a balance between the three humors: mucus, gall (bile) and wind [17]. In Nepal, we visited an ayurvedic market where herbs and spices were being sold as medicine. Locals would stop at this market and seek the advice of the worker. Then, the worker would suggest an herb to treat the symptoms that were reported by the locals.

Tibetan medicine/Chinese medicine is another common type of CAM used in Nepal. Specifically, Amchis (Tibetan medical practitioners) are very valued by the people as they are local healers that help guide their patients towards greater self-awareness and health [16]. Amchis are generally generational, meaning the profession is passed on through the family. They are not educated in the local education system, but via an internship with another Amchi.

Faith healers are also respected highly and used frequently as a source of treatment for various ailments in Nepal. Faith healing seeks treatment by prayer and exercising faith in a god [13]. Shamans, just one type of faith healer, assist their patients in connecting with the spirits that cause illness due to poor karma [16]. Some believe that disease is caused by a curse of the gods as well as by witches, demons, or other forms of evil spirits. So, when a Shaman heals, he goes through a trance state where his soul leaves his body and travels to the sky or into the earth, communicating with spirit helpers to either diagnose or find a cure for the patient [13]. It is also believed that if one dies due to unnatural causes, such as an accident or a murder, their soul will not go to heaven. Instead, the soul will roam around as a picha, or ghost. It is when these ghosts touch a human being that one becomes sick [13]. In Nepal we visited Pashupatinath, the most sacred Shiva temple in Nepal and also the main site of cremations for the deceased. Most people in Nepal wish to spend their last

moments at a sacred temple, such as Pashupati, or along the holy Bagmati River that flows through the temple. Many Shamans were seen along the grounds of the temple, giving relief to families who were grieving from the loss of their loved ones. While at the temple, Shamans were seen meditating, praying, and doing palm readings for their patients. CAM is the sole source of health care for unprivileged people in developing nations because of their economic status [18]. They will usually try every herbal remedy they can before proceeding to visit a public hospital. Public hospitals in Nepal generally deliver a more basic standard of care than private hospitals or Western hospitals, utilizing less technology.

VI. CAM IN THE UNITED STATES

In the United States, people generally use CAM when they are looking to improve their health, relieve symptoms associated with chronic illnesses like back pain in MS patients, or to relieve symptoms associated with terminal diagnoses for example pain in stage IV cancer patients. Some Americans who use CAM do so because they have a holistic health philosophy and believe the mind and body are not separate [19]. In other words, they wish to be treated as a whole person; not JUST an illness. CAM practitioners in the United States treat physical and biochemical manifestations of illnesses as well as the emotional, spiritual, and nutrition aspects [19]. CAM is used generally to complement other treatments, not replace them, in the United States.

According to the national health statistics report in 2007, 38% of Americans reported using Complementary and Alternative Medicine during the past twelve months in the United States [19]. Also according to this report, Americans most often used CAM to relieve back pain, head or chest colds, neck pain, joint pain, and anxiety or depression. The most common CAM therapies used in the previous 12 months in the United States included (by prevalence); nonvitamin, nonmineral natural products (for example fish oil supplements), deep breathing exercises, meditation, chiropractic or osteopathic manipulation, and yoga [19].

In the United States, there are about 6,000 acupuncture practitioners [12]. As defined by the American Board of Medical Acupuncture, an "acupuncturist is one who has acquired specialized knowledge and experience related to the integration of acupuncture within a biomedicine practice" [20]. To get their Doctorate of Acupuncture and Oriental Medicine degree, an acupuncturist must attend one of the roughly six schools in the country that offer the program. Also, each student admitted to one of these schools must have already had an education in anatomy, physiology, neurology, and other basic sciences involved in medical diagnosis and treatment. In addition to the above requirements, each student must complete 100 hours of clinical training as well as 100 hours of didactic learning [20]. It is estimated that 3,000 allopathic physicians (physicians who use modern treatment) have taken courses in acupuncture with intentions to incorporate this CAM treatment into their medical practice [12].

Also in the United States, there are over 1,000 licensed naturopathic doctors as well as 50,000 biofield practitioners [12]. The difference between a naturopathic doctor and a biofield practitioner is that a naturopathic doctor uses the body's natural self-healing powers to treat, restore, and maintain health. These physicians are more likely to use organic and nontoxic therapies such as natural food and bright sunlight to treat illnesses [9]. A biofield practitioner, on the other hand, uses biofield therapy (the human body's natural quiet energy) to treat and maintain the health of their patients. Biofield practitioners use the connections they feel with the universe to connect with their patient's energy field, changing the pattern of energy, thus causing a healing effect. Those who seek biofield therapy usually believe successful treatment will restore the imbalance of energy which previously made them sick [21].

There are roughly 50,000 qualified massage therapists in the United States who provide 45 million one-hour massage sessions per year [12]. Americans used this type of CAM most frequently when suffering from a chronic illness such as lower back pain, depression, or anxiety. Those with back pain most often chose massage to relieve pain [19]. A study showed that when compared with traditional Chinese medical acupuncture and reading self-care materials, therapeutic massage was the most effective in giving relief to patients suffering from chronic lower back pain [22].

There are 10 ayurvedic clinics in all of North America. This includes one hospital-based clinic which served about 25,000 patients during the time span of about 10 years [12]. Since the 1980's, ayurvedic medicine usage has grown greatly in the United States. The National Ayurvedic Medical Association (NAMA) provides leadership within the ayurvedic community to promote a positive vision for ayurveda. This organization began in 1998, was incorporated in 2000, and sets regulations for preserving, improving, and promoting the science and practice of ayurveda to benefit humankind. NAMA has thirteen partner schools that meet the minimum requirement (set by NAMA) which assures they can give an education in ayurvedic medicine. While some people continue to think that Western medicine is the best way to be treated, many people are becoming more willing to try alternative forms of prevention and treatment for different illnesses [23]. For example, 19.8% of adults reported to have used an herb called echanacia, within the previous 30 days that the national health statistics survey had been taken [19]. This herb has been suspected to activate chemicals within the body that decrease inflammation, thus decreasing the chance of contracting a cold or flu virus, while also alleviating symptoms that cause pain like back pain or Rheumatoid Arthritis (RA). Also, those diagnosed with a terminal or chronic illness, such as cancer, are more likely to use CAM as a last resort when other methods of treatment have been attempted, but have been unsuccessful.

VII. ADVANTAGES OF CAM

It is commonly believed that people who choose to use CAM do so because it is a cheaper alternative to conventional

treatment, or it is all they can afford. However, this is not always the case. There are definite instances in which CAM treatment can be cheaper than a conventional treatment; however, it has been shown that in some cases, CAM, when compared to conventional medicine, was more expensive. In fact, most of the time in countries like Nepal and Indonesia, people do not choose to use CAM because it is cheaper, they choose it because they have confidence in the treatment, it's easier to access, and it is an easier way to receive care [18].

A. Cost

When comparing the cost between CAM and Western medicine, cost-effectiveness depends on the type of CAM being used. A study found that an acupuncture referral for a musculoskeletal condition cost a mean of \$422.00, which is about 60% less than what it would cost to see a Western practitioner for the same disorder [18]. A different study found that homeopathic medicine also costs less than the average cost of allopathic products: \$96.00 was saved when homeopathic drugs were used. However, the results may outweigh the costs when using homeopathic drugs, if homeopathy has not been proven as effective for certain illness [18]. Another study that compared participants who received ayurvedic-based natural medicine and other participants who were covered through BlueCross BlueShield health insurance, showed that those in the ayurvedic group had 50% lower expenditures per person [18]. Lastly, Lind, Lafferty, Tyree, and Deihl (2010) examined the cost of health care for patients with back pain, fibromyalgia, and menopause symptoms, and found that those who used CAM had overall lower health care costs than did those who did not use CAM [24].

Even though receiving treatment via a CAM practitioner may be more expensive, many times, especially in countries like Indonesia and Nepal, their prices are negotiable. Also, the method of payment may be flexible. So, instead of using currency, a credit system can be established or the service given can be in exchange for manual labor [18]. As discussed previously, patients who seek treatment with a CAM practitioner can negotiate a fair trade with their practitioner if they are not able to pay with cash for treatment.

In Nepal, the harvesting of plants for medicinal usage provides a living for many who live in rural areas. Usage of herbal remedies has been on the rise, not only in developing countries, but also in developed countries, so the demand for these herbs is also increasing. For example, herbal tea, herbal shampoos, and natural creams are becoming more and more popular in Western countries. Nepal can supply an abundance of these products to the world using locals who are employed to harvest herbs [13].

B. Fewer Side Effects

Another reason a person may choose CAM over Western medicine is that there are generally fewer side effects associated with consuming natural substances than there are with consuming man-made substances. Most people do not wish for the treatment of an illness to be worse than the illness

itself. Since Western medications sometimes create side effects that are worse than the illness, many people are choosing to use CAM [25].

C. Availability

For those who live in rural areas of the world, CAM is more widely used due to availability. There are simply not enough Western or modern practitioners within commuting distances of rural homes to be able to make an appointment to see them. In Nepal, qualified practitioners are often not willing to go to rural villages for various reasons [26]. Most rural villages have at least one local CAM healer to treat illness.

In Nepal, herbal medicines are found in forests growing freely around rural villages. Locals also grow their own herbs in the courtyards of their houses. Since these people are taught to take herbal medicine from a very young age, it seems more appropriate that they would seek herbal remedies for treatment as adults. Also, since most elderly people live with their families until they die, elders are able to share their knowledge about simple herbal remedies for many illnesses. Medical “shops” are widely available within Nepalese villages or at the market where ayurvedic medicines are normally stocked. Naturally, locals will first visit these shops when seeking treatment, as it is what they know [26].

D. Comfort

Some people use CAM as a last resort when fighting a chronic illness like cancer. After cancer is “end stage” CAM usage may be useful to relieve side effects of Western medication. A study in 2009 found that acupuncture, when used for cancer pain, may provide short-term relief in terminally ill patients [8]. Also, massage with or without aromatherapy might provide short-term relief for patients who are in pain from cancer [27].

Others use CAM because it brings more relief to their symptoms than Western medicine does, with fewer side effects. As discussed previously, acupuncture may relieve pain for a short amount of time, with near to no side effects [8]. Acupuncture is preferred because treatment with opioid medications that inhibit pain may cause an increase in unpleasant side effects such as constipation, nausea, and vomiting. These are unpleasant symptoms for both the family and for the patient who is ill.

Still others use CAM because they are more familiar with CAM than they are with Western medicine which many. In Nepal, sick people first consult with their healer before going to visit an allopathic physician. Often times, Nepalese people will not seek western medical treatment without the permission of their healer, first [26]. This was similar with what was learned from Jero Pura in Indonesia. She informed us that villagers would first come see her before going to a Puskesmas or public or private hospital.

VIII. DISADVANTAGES OF CAM

A. Availability

According to the WHO, 85% of the world’s population (especially those in developing countries) depends on plants

for medicine [7], [35]. Quinlan (2011) estimated that about 70% of the population across the world depends on herbal medicine for the primary care [28].

25% of prescription drugs have active ingredients that come from flowering plants in nature [18]. Both developing and industrial countries have become somewhat dependent on medicines that come from nature, so of course extinction of these natural plants is concerning. Many natural and herbal remedies are at risk for being overharvested for medicinal purposes. For example, American ginseng is being poached and palmetto is at risk for being overharvested. Across the globe in Asia, the poaching of tiger genitals, bear gallbladders, and rhinoceros horns has become a major threat to these species [18]. Other ways in which natural herbal remedies may become scarce include: deforestation, forest fires, shifting of cultivation, and overgrazing. Also, natural causes such as landslides and floods as well as the effect of global warming on the glaciers in mountainous countries may increase the spread of synthetic pesticides and herbicides to crops not intended for use [13].

B. Lack of Physicians

A big disadvantage the Indonesian health care system faces in general is the lack of medically-trained physicians. The doctor-to-population ratio in Indonesia is estimated at around 0.29 physicians per 1,000 people in the population [29]. When compared with other countries of similar income levels and areas of the world, Indonesia had lower ratios of physician to population. The reason for this is somewhat due to the population being spread out across many islands which are separated by large bodies of water. Indonesia has the fourth largest population in the world, and as a developing country, it is hard for the country to supply care to not only the dense cities within the country, but also to 70% of its people who live in rural areas [30], [31].

Out of more than 8,000 medical doctors in Nepal, only 1,062 work in sanctioned government posts and about 300 work in government posts. Two-thirds of these doctors work either in Kathmandu or in other cities. A major problem in Nepal is lack of distribution of all doctors across rural and urban areas of the country. There is also a low retention rate of both doctors and nurses in Nepal. About 4% of total health care workers in Nepal are doctors, 12% are nurses, 47% are paramedics, and 3.1% are traditional health care providers. There is also currently an abundance of unskilled support staff working in the medical field, with 28% of the total workforce being in this category [32]. These are large problems in the health care system of Nepal that need to be faced head-on.

In the United States, it is estimated that about 40% of CAM therapies are discussed with medical doctors. This is a problem because some CAM treatments may interact negatively with the Western therapy a person is receiving. The problem may not necessarily be lack of CAM physicians, but the lack of communication between all physicians and their patients. Many patients feel uncomfortable talking with their physician about alternative forms of treatment. So, it is important to make sure physicians are inquiring about all

kinds of therapy a patient is receiving. Physicians and CAM providers should work as a team, giving proactive input to their patient's care [33]. Nurses can advocate for their patients by asking questions related to CAM treatments and relaying their findings to their patient's physician.

C. Structure of the Health Care System

A negative aspect of the Indonesian health care system is the fact that management of the health sector within the government is broken up across several ministries as well as among different levels of the government. Lately, the Indonesian government has been focused on increasing the *supply* of health care; not necessarily providing *quality* health care. This was recently seen as a problem, and now the government is starting to concentrate more on improving the quality of health services that Indonesians receive. Poor quality of care can result in high levels of self-treatment, which is currently used by about two thirds of the population [30], [31].

According to Rokx et al., urban areas of Indonesia had about 0.36 physicians per 1,000 people while in rural areas, the number of physicians per 1,000 people dropped to 0.06 [31]. This is in part due to the fact that new physicians are more likely to start a private practice in urban areas, as they can demand higher salaries if they do so. The problem that remains is that there is still a lack of physicians practicing in rural areas of Indonesia. So, to encourage new physicians to work in rural areas of Indonesia, the government is allowing physicians who agree to work in rural areas to have a dual practice. The dual practice policy allows these physicians, who agree to work in rural areas, to practice more than one type of health care. In most developing countries, this means that the provider works with both the private and the public sector of the population. According to a systematic review that was done by Kiwanuka and her colleagues, it was found that in countries with a major shortage of health care workers, having a dual practice program without restrictions may do more harm for the country than good. These researchers suggest that for a particular low-income country to be able to benefit from dual practice physicians, very specific mechanisms need to be designed and analyzed [34].

Most money allocated to health services in Nepal is provided to the private health care sector by policymakers in the government. It is estimated that 10.9 billion Rupees are spent on health care in Nepal each year, and 7.7 billion of these Rupees are allocated to the private sector. These allocations go towards improving private hospitals, nursing homes, and diagnostic areas mostly in urban areas of the country. As a result, collaboration between different health care sectors in Nepal is a challenge. This is also true due to inadequate access to health care facilities and inadequate infrastructure. Nepal has a very mountainous terrain, which causes increased difficulty in caring for people who live in rural areas. This also leads to limited health infrastructure and lack of financial resources. As a result, most doctors and public and private health facilities are located in urban, more accessible, areas of the country. Inadequate infrastructure of

health facilities contributes to a lower health status of the country as a whole. Many facilities in rural Nepal do not have running water or electricity, clearly affecting the health care services they can give to the people. So, the government of Nepal can improve health in the country by allocating more resources to the public health sector as well as encouraging programs within all health care sectors to expand their overall activities [35].

In the United States, it is now required that everybody either have health insurance or pay a fine for not having health insurance. The amount an American pays out of pocket for medical expense is usually determined by the quality of their insurance program. Decades ago, it would have been unheard for an insurance company to cover the cost of CAM treatment, since there was little research to prove the efficacy of it. Now, some insurers are offering partial coverage for CAM therapies. However, CAM treatments are usually subject to very strict regulations. For example, Medicare (a type of insurance program) may pay for a chiropractic visit for a patient who has chronic back pain, but will not pay for a chiropractic visit for a person with pain from cancer. Also, Medicare never covers the cost of acupuncture for a therapeutic purpose [33].

IX. CASE STUDY

A. History and Physical Examination of Patient

J.D. is a 48 year-old female who is in to see her primary doctor due to extreme weakness and fatigue. She seems to believe these findings are caused by menopause, as her periods have been irregular and heavy at times. In the past month, she has lost 40 pounds, for no known reason. J.D. has been diagnosed as pre-hypertensive; her hypertension has been controlled with diuretics. In the past year, the results for her mammogram were normal; however she has not yet received screening for a colonoscopy or sigmoidoscopy. She is currently taking furosemide and ibuprofen as needed for arthritic pain in her hands and knees. Significant family history of illness includes her mother who has had type II diabetes for 35 years, her brother who has hypertension, and her father who died of a myocardial infarction 23 years ago. She lives alone currently, but has two daughters that she visits often. She also owns and manages her own small clothing store. She reports never smoking and drinking alcohol occasionally in social situations. Upon examination, J.D. reported constipation and hemorrhoids, mild dyspnea on exertion, and chronic arthritis in her knees and hands due to her love for tennis. She appeared to be a pale and thin woman. She was five feet, six inches tall and weighed 128 pounds. Her vital signs were: blood pressure, 128/90 mm Hg; pulse 80 bpm; respiratory rate 24 breaths/minute; and temperature 99.2° Fahrenheit. J.D.'s pupils were even, round, reactive to light, and would accommodate to distant and far away objects. S1 and S2 heart sounds were heard with no murmurs. The lungs were clear bilaterally. Her abdomen was not distended, and was not tender during palpation. J.D. had good range of motion in all four extremities and reported loving to play tennis. Her skin was intact. Initial laboratory tests were done

and the findings are as follows: WBC count, 5500 cells/mm³; Hgb, 7.7g/dL; Hct, 23%; RBC count, 3.7 x 10⁶/uL; platelet count, 675,000/uL; mean MCV, 55um³. Her chemistry panel findings were: creatinine, 1.0 mg/dL; bilirubin, 0.9 umol/dL; BUN, 16 mg/dL; glucose, 124 mg/dL; sodium, 130 mEq/L; potassium, 3.7 mEq/L; magnesium, 2.0 mEq/L; and calcium, 9.4 mg/dL [36]. The laboratory values reported for this case study are results that would definitely be collected in the United States, therefore is a more western model. The laboratory values would probably not typically be collected as part of an assessment tool in Indonesia or Nepal before a patient receives treatment.

B. Treatment in Indonesia

In Indonesia, J.D. might initially see a local healer to discuss her symptoms of fatigue and extreme weakness. The healer may then use therapeutic touch to relieve her fatigue and weakness thought to be caused by karma or evil spirits. J.D. may also visit an ayurvedic market and talk to the physicians there about which herbs may relieve her symptoms. It is unlikely that J.D. would visit a conventional doctor right away to get a full physical examination; this would probably be done later when her symptoms got much more severe. However, since she owns her own business, J.D. would likely be in a high caste. So, most likely, she would be able to afford seeking treatment at a private hospital.

C. Treatment in Nepal

Depending on the region of Nepal where J.D. lives, treatment sought for her symptoms would differ greatly. Similar to Indonesia, J.D. would probably not visit a private hospital right away. Instead she would take ayurvedic medicine via an ayurvedic market. She may also visit a Shaman to receive prayer for relief of symptoms. Unless J.D. lived in the mountains, where options are more limited, she may then go to a private hospital to seek treatment. Since much of the land in Nepal is mountainous, it is difficult for Nepalese people to go to hospitals, which are located in the urban areas. Many of the people who live in the mountains are from the ethnic group "Sherpa" and have a Buddhist background. As stated before, Buddhist people believe in karma and reincarnation. So, in J.D.'s case, it might be her karma to have colon cancer (although they probably would never learn that they have it), and that in her next life, she may have a more positive life-force.

D. Treatment in the United States

In the United States, J.D.'s treatment would be very fast and focused. Since J.D.'s hemoglobin and hematocrit were both low in the initial assessment, an iron panel was drawn next. The iron of the blood results were low, so an iron deficiency anemia diagnosis would be supported. This also correlates with her past medical history, recent examination, and previous laboratory data. Her primary health care physician then prescribes an oral iron supplements for her to take as well as oral vitamin C supplements to take with the iron at mealtimes. J.D.'s doctor would then look for an underlying cause to the anemia. The iron supplement exacerbated J.D.'s

constipation, so once she passed stool it was evaluated for blood. The test showed a 1+ guaiac reaction, which is why J.D.'s doctor referred her to a gastroenterologist for a colonoscopy. The colonoscopy found a 4 cm mass in the ascending colon, which was biopsied. Another mass, later classified as an adenoma, was also biopsied and removed from the transverse colon. The pathology indicated that the mass in the ascending colon was poorly differentiated invasive adenocarcinoma. The mass in the transverse colon was identified as a tubular adenoma. To remove the mass, J.D.'s surgeon first gave her two units of packed RBCs and scheduled an exploratory and right hemicolectomy as soon as her hematocrit reached the safe range of 32%. A right hemicolectomy was safely performed, however during the procedure, the surgeon found another suspicious site on the liver and biopsied it. The pathology report from the surgery described that the differentiated adenocarcinoma invaded through the muscularis propria into the pericolic fat, but all margins were negative, pericolic lymph nodes tested positive for metastatic carcinoma, and the liver biopsy tested negative for carcinoma. J.D.'s cancer was staged as stage IIIC colon cancer. Further treatment for J.D. was chemotherapy to remove the rest of the metastasized cancer cells. She was treated in an outpatient setting, with one of her daughters taking her to get her chemotherapy treatment [36].

X. NURSING IMPLICATIONS

According to the Oregon State Board of Nursing, nurses must first receive training in specific areas of CAM to be able to perform CAM care within the scope of practice standards set for their particular licensure. They can do so by being educated via a clinical component supervised by a licensed qualified nurse. For example, if a nurse wishes to use massage therapy, she must receive massage therapy training from a massage therapist or a nurse who is certified in massage therapy [37]. Nurses must also be educated in order to give guidance when assessing the health history and assessing the body systems of their patients. Nurses need to be knowledgeable about CAM in order to answer basic questions about the use of CAM therapies, refer patients to therapists or physicians that are licensed to perform CAM, and to be able to administer selected CAM practices in her practice [38].

However, before a nurse is able to integrate CAM with her patient, she must complete the following steps. The nurse must holistically assess each of her patients; assuming all patients may wish to receive CAM care, not just recently-immigrated patients of different ethnic backgrounds. This assessment must be documented before a nurse can establish a plan of care for her patient. The plan of care should be established for the patient which may include CAM as a medical intervention. Depending on the intervention, a doctor's order may be required before further steps can be taken. After the nurse establishes a plan of care and it is ordered by the physician, she must explain the plan to the client while also explaining other conventional forms of treatment the client may choose to seek. If the client chooses CAM treatment, he/she must sign a consent form stating they are giving the provider and the nurse

permission to utilize the specific type of care they are choosing. The nurse must then make sure appropriate documentation of her knowledge, judgment, skill, and competency is available before applying the treatment. She must also explain the intended benefits of CAM treatment as well as the possible risks of treatment. If the nurse does not have the appropriate licensure or certification at this point, she must obtain it before she can treat her patient. After all of these steps are completed, the nurse can then use the CAM therapy for which she has been trained [37]. After treatment is complete it must be evaluated, as always when planning a new care regimen. Assessment information, plan of care, interventions, and evaluation are required to evaluate the effectiveness of the therapy.

When providing quality care to patients, especially those battling cancer, it is imperative that all nurses understand the reasons their patients use CAM. Perhaps it is the way of life that one chooses to live. Many people of other cultures primarily use different types of CAM when seeking treatment. So, as America continues to diversify, it is important to be aware of the beliefs of these people. Also, the idea of using more natural-based substances has become more popular in America lately. So, Americans may choose to use CAM simply because it is a natural way of healing, and they want to try it before taking something that has been manufactured.

People may choose CAM in order to minimize the side effects of chemotherapy, for example. Most chemotherapy patients are prescribed an antiemetic or proton pump inhibitor medication as needed for nausea and vomiting when receiving treatment. For these patients, perhaps they would be more interested in receiving acupuncture therapy. A study suggested that acupuncture relieved pain in terminally ill patients with fewer side effects than oral medications [8].

XI. CONCLUSION

Since America is becoming an increasingly diverse nation, it is important that health care also becomes diversified. Indonesia and Nepal have a complex health care system with several different levels of health care that individuals may seek. However, it is more common for individuals in these countries to use CAM as treatment and to seek treatment with a holistic approach. The United States, on the other hand, relies heavily on allopathic treatment, including oral medication and treating the specific cause of a disease.

CAM usage in Indonesia and Nepal is more prominent than usage in America. Citizens of Indonesia and Nepal are more likely to seek treatment via a healer whereas the most common form of CAM used in the United States is nonvitamin, nonmineral supplements. Advantages of CAM worldwide include cost, availability, fewer side effects, and comfort. Disadvantages of the usage of CAM include availability (due to possible overharvesting etc.), lack of communication with educated physicians, and the structure of the health care system.

Lastly, it is important to note that even though citizens of different countries may have the exact same symptoms, treatment for these symptoms would differ between Indonesia,

Nepal, and the United States greatly. As discussed, Indonesia and Nepal would explore a holistic approach and would treat the whole person whereas in the United States, priority of treatment would be given specifically to the cause of the illness.

It is important that oncology nurses be especially knowledgeable about CAM treatment when caring for oncology patients. Facilities that treat cancer patients need to make sure nurses have the appropriate training when caring for patients who choose to use CAM. They can do so by offering CAM education and leadership, and by supporting the alleviation of nursing concerns about role uncertainty and knowledge deficits while promoting a supportive environment. Nurses must be aware of the federal and state regulations, and their professional organization's policies in relation to fully be able to care for those who choose to use CAM in their cancer treatment [38].

In order to effectively treat their patients, nurses must first identify their own beliefs and personal views regarding CAM so they can be unbiased when giving therapy. Many times, patients will not report using CAM because they believe their health care provider has a negative view about it. It can be dangerous for patients who are receiving CAM therapy to leave their therapy unreported: it may have detrimental side effects when used alongside of their chemotherapy treatment. Nurses may also have a cultural bias when providing care to patients of a different culture. Once again, it is important for a nurse to recognize this bias so they can try to avoid biased decision making. If a nurse is able to recognize this bias, patients are more likely to trust their nurse because they will not feel judged about the choice of health care they are seeking.

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Jessica I. Asaro currently resides in Ira, MI and was born on September 28, 1992 in Charleston, South Carolina, USA. She earned a Bachelor's of Science in Nursing Degree in August, 2014 at Saginaw Valley State University (SVSU), in University Center, MI, USA. While at SVSU, Jessica was in the Honors Program and completed her honors thesis in November of 2013.

Ms. Asaro is a member of Sigma Theta Tau International, Theta Chi Chapter and the Global Science and Technology Forum. Jessica received the best student paper award at the Second Annual Worldwide Nursing Conference in Singapore in 2014.