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Alternative Medicine:
The Good, the Bad,
and the Ugly

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Executive Summary

Due to a variety of reasons, alternative medicine has once again become a topic of controversy. The area of alternative medicine has become so vast that it is nearly impossible to discuss all of its therapies and techniques. Therefore, this paper will concentrate on acupuncture therapy, chiropractic treatments, and herbal remedies. The final section of the paper will examine the emerging obstacles for alternative medicine.

Although all conventional medicine started out as alternative treatments, the alternative treatments of today share some common characteristics. The therapies tend to focus on the patient, not the disease. Instead of identifying symptoms and prescribing standard drugs, alternative practitioners consider the patient's unique situation. This leads to a holistic approach of medicine, which means that heart, body, and mind all need to be treated. There is relatively little scientific evidence supporting alternative medicine, which hurts its credibility among society.

Acupuncture, one of the oldest alternative treatments, began in China as part of the Traditional Chinese Medicine. By inserting needles in various points throughout the body, an acupuncturist can relieve pain, nausea, stress, headaches, etc. Chiropractic treatments, which has recently been recognized as a more "mainstream" practice, involved manipulating the spine and neck. However, many chiropractors use other treatments like applied kinesiology or reflexology in conjunction with spinal adjustments. Herbal remedies and supplements, while extremely popular, are rarely used by themselves to treat health problems. Like acupuncture, they are a part of Traditional Chinese Medicine.

Even though alternative medicine has certainly retained a loyal following, there are many obstacles which creates problems for alternative medicine. The Food and Drug Administration (FDA), while refusing to regulate any dietary supplements, also refuses to allow any dietary supplements to be upgraded to food additives. In addition, conventional medicine's skepticism about alternative treatments has influenced society's view on alternative medicine. Lastly, invalidated claims by confidence men or "spiritual gurus" cast a shadow of mistrust on the alternative health industry. However, alternative medicine has been around over 5,000 years, and it seems to be only getting stronger.

Alternative Medicine: The Good, the Bad, and the Ugly

In recent years, alternative medicine has earned its place in the media spotlight. The publicity has been both positive and negative, but alternative medicine has stood the test of time. Many of the new followers of alternative medicine are unaware of its amazing breadth and depth. It would literally require thousands of pages to fully explain the intricate details of alternative medicine. Instead of trying to include all alternative therapies, this paper will attempt to examine alternative medicine as a whole, and then focus in on three distinct categories: acupuncture therapy, chiropractic treatments, and herbal remedies. The final portion of the paper is dedicated to discussing the barriers facing alternative medicine today.

The industry of alternative medicine is growing rapidly today for a number of reasons. The increasing number of chronic illnesses, the aging of the Baby Boomers, and the concern about the environment have all contributed to a heightened awareness of alternative therapies and treatments. Obviously, not all alternative therapies work, and a small number are even dangerous. Experts tend to categorize the therapies into three distinct sections: validated, nonvalidated, and invalidated. Acupuncture and chiropractic treatments are both considered validated. This means the therapies have been proven to aid in some pain or illness. Studies have been done, and scientific evidence supports the basis of the treatments. In addition, as with chiropractors and some acupuncturists, many practitioners are either licensed or otherwise regulated. The nonvalidated therapies have not been proven harmful, but they have not yet been proven helpful either. Little information exists on these therapies, so no decision has been determined. Therapies like herbology and applied kinesiology are examples of therapies which are termed nonvalidated. Invalidated therapies are those which have been proven completely worthless, even harmful. Crystal and ozone therapies are examples of invalidated alternatives.

The different alternative methods vary widely, but they all have some common characteristics. They are all based on a holistic approach to healing, which means that the therapy involves the body, mind, heart, and spirit. Instead of just healing the physical discomforts, alternative medicine seeks to obtain comfort for the entire being. This idea is supported by conventional doctors, who acknowledge that a positive emotional and mental state can aid in the fight against illness. Alternative medicine also endorses the idea that improving the emotional and mental states of a person can prevent further physical illnesses. For instance, the chance of having a stress-related condition such as stomach ulcers may be reduced through using alternative treatments.

Alternative medicine is centered around the patient, not the disease. This also requires active participation by the patient in the healing process. Instead of a doctor simply diagnosing symptoms and then handing out orders, the patient is involved in choosing the appropriate treatment. Along with this, alternative medicine uses an individual approach. Many conventional treatments simply identify symptoms, look up the symptoms in a medical reference, and then administer the standardized treatment to patients. Alternative methods recognize that each individual person is different, so what works with one person may or may not be successful with another patient. Since alternative medicine uses individualized treatments, there are very few scientifically accurate studies done on alternative methods. It relies more on anecdotal evidence and personal testimony. Because of the lack of scientific evidence supporting many of the alternative therapies, criticism of alternative medicine continues.

Statistics are relatively rare in alternative medicine, but there are a few numbers which are valuable to examine. Alternative medicine has been around over 5,000 years. Icing a sprain, enjoying a massage, and relaxing in a tub are all forms of alternative medicine. Extensive records of Traditional Chinese Medicine (including acupuncture) were kept by the Chinese for over 2,500 years. In the modern world, over one-third of Americans surveyed stated that they

had seen an alternative practitioner during 1997. The number of people relying on an alternative therapy grows every year. In the year 2000, Americans spent more on "alternative treatments" than on conventional medicine, which included doctor visits, hospitalizations, and prescription drugs. The natural products market, including vitamins and herbs, has been growing over 20% annually since 1994. Despite some obstacles, alternative medicine is becoming more popular all the time.

One of the oldest and most well-known alternative treatments is acupuncture. It began in China over 2,500 years ago, and it remains an integral part of Chinese medicine. The theory of acupuncture is based upon the concept of qi (pronounced chee). Qi is the life force in a person; if you are alive, then you must have qi. It flows through the body via meridians, or channels. The cause of all disease lies in the imbalance of qi. If there is too much or not enough qi in a certain area, then an illness can result. The needles are used to balance the amount of qi at certain points. There are over 365 acupuncture points in the body, and they represent various areas of the body. The concept behind the acupuncture points is that all parts of the body are connected. Therefore, putting a needle in one's wrist may help one's lungs. The notion of qi is very similar to the idea of yin and yang in the Japanese culture. Harmony must exist for a person to return to normal health. The Chinese view the body as a miniature universe, affected by external and internal environments. Therefore, acupuncture, massage, nutrition, exercise, and Chinese herbs are all used to restore balance. These five treatments, called the Five Pillars of Traditional Chinese Medicine, are meant to help balance the external and internal environments.

Acupuncture is used frequently today to help with chronic illness or discomfort. For instance, many cancer patients use it to alleviate nausea, pain, or headaches. The World Health Organization has listed over 100 diseases and conditions for which acupuncture is helpful. Although it is a validated, hands-on therapy, acupuncture still has many skeptics. One of the reasons for this is the lack of regulation among acupuncturists. In many states, acupuncturists do

not have to be licensed. The effectiveness of the treatment is highly dependent on the skill of the practitioner, so it is important to have a trained professional. The National Certification Commission for Acupuncture and Oriental Medicine as well as the American Association of Oriental Medicine provide a listing of certified acupuncturists.

Unlike many other therapies, the cost of acupuncture is reasonable for most people. The average cost for an initial visit is \$60, and the follow-ups are usually around \$30. Treatments are usually given once a week for 6-10 weeks. In California, private medical insurers are already covering acupuncture visits, and experts believe more states will follow in the near future. For people who are afraid of needles, there are variations to acupuncture. Electroacupuncture use electric currents instead of needles to stimulate the acupuncture point. Acupressure is another needle-free form of acupuncture involving finger pressure. It is referred to as shiatsu acupuncture in Japan. If an acupuncturist does use needles, all the needles are either disposable or sterilized. The needles are much smaller than traditional hypodermic needles, and little if any pain is felt by the patient.

Another validated, hands-on therapy is chiropractic treatments. It is one of the newest additions to mainstream conventional medicine. Even though it has only recently been given much credence, it is the third largest health care profession in America with over 58,000 licensed professionals. All fifty states require chiropractors to be licensed in order to practice medicine. For many, this requirement serves to legitimize chiropractic therapy. In addition, 41 states now require private insurers to cover the costs of chiropractor visits, so it becomes no more expensive than conventional treatments.

Chiropractors adhere to the belief that the spine is at the center of a patient's health. They manipulate and adjust the spine in order to relieve discomfort or pain. Many patients who visit chiropractors do so because of accident-related injuries such as whiplash. Even conventional medicine has noted the success chiropractic therapy has with treating neck and back discomfort

from whiplash. Besides adjusting the spine, many chiropractors also use other treatments as well. Reflexology, herbal remedies, dietary supplements, applied kinesiology, and massage therapy are commonly used in conjunction with adjusting the spine. Reflexology, originating in Europe, is similar to chiropractic treatments. Instead of manipulating the spine, reflexologists manipulate other points on the body. The most common points are the feet, palms, and ears. These points correspond to various areas of the body. For example, the balls of one's feet correspond to the heart and lungs. If a patient's foot is hurting, it may be an indication of a heart or lung problem. Although reflexologists do not have to be licensed, there is an American Academy of Reflexology. For more information on chiropractors (and reflexology), one should contact the American Chiropractic Association, which provides a list of all the licensed chiropractors in America.

Applied kinesiology is another popular treatment used by chiropractors. It was developed in the 1960s by an American chiropractor. Kinesiology is the science of movement, and applied kinesiology is based on the testing of the muscular system. Like chiropractors, kinesiologists use spinal and head adjustments to relieve pain, but they also use other techniques. Muscle testing is very common with athletes who have suffered sports-related injuries. If a muscle tests weak, then something in the body is not functioning correctly. The four broad functioning areas are structural, physical, internal, and emotional. If the patient is suffering, then one of those areas is malfunctioning. An applied kinesiologist also looks at one's tongue, eyes, skin, hair, and nails. By examining these features, he or she can detect things such as dehydration, stress, stomach problems, and food allergies. For example, if a patient has an unusual rash, it is probably related to intestinal problems.

Besides muscle testing and physical observations, an applied kinesiologist also utilizes a variety of other treatments to obtain the desired balance for the patient. Phototherapy and color therapy are used to correct any color or light intolerances. Kinesiologists believe the body

should vibrate at a certain frequency with a certain wavelength. If the body isn't vibrating at the correct frequency, then it may test weak against certain colors or lights. This same theory underlies the usage of sound or magnetic therapy. Sounds and electronic signals are transmitted in waves, and the body will be weak if the wavelength of its vibrations is not correct. Applied kinesiologists will use colored glasses, tuning forks, and magnets to correct the imbalance. They also use a soft or cold laser, set at the desired wavelength of the body, to speed the healing process in the patient. The soft laser does not penetrate or cut the skin, but rather emits a light wave designed to correct the vibrations in the body.

Another prominent trend in alternative medicine is the use of herbal remedies and supplements. Like the other therapies, herbal treatments involve a holistic approach. Changes in one's diet or exercise always enhance the positive maximum effect of the herbs and supplements. Herbal remedies are rarely used individually to treat conditions. As mentioned before, herbs are just one of the five pillars of Traditional Chinese Medicine. They are used with acupuncture and chiropractic treatments as well as other therapies. Even though herbal and dietary supplements are extremely popular in the United States, they are highly unregulated. There is no government agency or body which regulates herbal and dietary supplements. However, the United States Pharmacopeia (USP) is a non-governmental organization which provides valuable information about the various herbs and supplements.

All the major herbs and supplements come in the following forms: teas, infusions, tinctures, extracts, tablets, injections, and oils. It is nearly impossible today to enter a grocery store or pharmacy without seeing rows upon rows of herbal and dietary supplements. However, many people have no idea what each new supplement is capable of doing to their bodies. Following are some of the more common herbal supplements today. Gingko biloba is said to improve circulation, blood clotting, and cognitive abilities. It has been shown to improve blood circulation, including blood flow to the brain. A person's cognitive processes might be a little

clearer due to the increased blood flow. However, ginkgo biloba cannot make someone smarter overnight. If someone is taking a prescribed anticoagulant, he or she should not take this herb.

Ginseng, another popular herb, is helpful for boosting one's energy and immune functions, but it is not helpful for HIV/AIDS patients. St. John's wort was believed to be a good supplement for treating depression and fatigue. Nonetheless, the latest study conducted revealed that the herb has very little success with helping depression. Glucosamine and chondroitin have also encountered some bad publicity because of recent inconclusive studies. Glucosamine is a natural rebuilding compound while chondroitin helps stop production of an enzyme causing the breakdown of cartilage. Theoretically, the combination of the two herbs would help rebuild cartilage, but the verdict is not in yet.

Some successful herbs are valerian root, aloe, and kava. Valerian root has become the herb-of-choice for many women because of its ability to help with premenstrual syndrome, insomnia, and stress. Aloe, which has absolutely no negative side effects, is used to treat burns and wounds. Surprisingly enough, it has been approved as a cancer treatment, but only for cats and dogs. Kava, a plant from the South Pacific, is a well-known muscle relaxer. Unfortunately, its potency has turned the herb into a new recreational drug or aphrodisiac.

Although alternative medicine has certainly enjoyed success, there remain many critics and skeptics. Today's society puts more faith in scientific studies and experiments. Most of the supporting evidence for alternative medicine is not based on the scientific method, so it is not considered as valid as conventional or traditional medicine. However, alternative medicine faces other obstacles in its quest for legitimacy. Three of the biggest barriers are the Food and Drug Administration, conventional doctors, and invalidated claims.

The Food and Drug Administration (FDA), a government agency, is responsible for regulating the sale of any products classified as a food or drug. In 1994, Congress passed the Dietary Supplement and Health Education Act (DSHEA). The purpose of this law was to

declare that all herbs and dietary supplements were not considered food or drugs; therefore, the FDA was not responsible for regulating any herbal or dietary supplements. Without any government regulation, herbs and supplements flooded in from every country. The public is not guaranteed the herbs' safety or effectiveness. Many herbs make ridiculous claims, such as the ability to cure cancer. Other herbs, especially Chinese, sold in this country are laced with lead or other harmful materials. These types of herbs can be harmful to uneducated users. A tragic example of this is the "ma huang" overdoses in 1996. Dozens of people overdosed on the herb *ma huang* or *Ephedra* because they were unaware of its side effects. Because the government does not regulate the herbs sold in this country, alternative medicine is blamed for the relative ignorance of patients.

The FDA also creates problems for alternative medicine by attempting to overstep their authority. The best example of this abuse is the case involving stevia. Stevia, discovered in 1881, is a herbal sweetener. It has no calories, and it is 200-500 times sweeter than table sugar. One drop of the liquid extract of stevia would sweeten an entire pitcher of iced tea. It is grown in China, Paraguay, Brazil, and even North America. Unlike many other products, the extraction methods do not involve chemicals. Stevia does not increase blood sugar levels, so it is perfectly safe for diabetics. However, the FDA has never considered categorizing stevia as a food additive because of the detrimental effect it would have on the large sugar companies. The sugar beet farmers in America would be devastated if stevia was allowed to be sold in the open market. One company, Stevita Co., attempted to market stevia in the United States in 1998. The FDA claimed that the advertising led consumers to believe it was a "food additive" instead of a supplement. The FDA decided to burn shipments of stevia along with the brochures and other promotional material. They determined that stevia is a safe supplement but an "unsafe food additive." Significantly, stevia is used almost exclusively in China, where the rate of diabetes in

the population is less than 0.2%. However, the lack of knowledge of stevia has prevented it from ever becoming mainstream in America.

The next barrier alternative medicine faces is conventional doctors. Even though more and more doctors are exploring the uses of alternative therapies, most mainstream doctors are skeptical of its effectiveness. Conventional medicine is evidence-based with scientific studies to support its claims. It uses the biomedical model, which means that there is a physical cause underlying all diseases. Contrarily, alternative medicine believes that the cause could be related to the body, mind, or spirit. Conventional doctors are also not in favor of using more than one therapy at a time, called pluralistic health care. Alternative medicine, on the other hand, is built around the idea of addressing the entire body, not just one area. Traditional medicine also tends to focus on alleviating symptoms rather than determining the underlying cause of the disease. In turn, the prescribed drugs can have side effects even worse than the disease itself.

Obviously, conventional medicine has served its purpose well over the years. If someone was stabbed in the leg, he or she would not go to the nearest herbalist for treatment. Conventional doctors have certainly improved on emergency medicine. Many people are alive today because of the increasing technology in surgical procedures and detection methods (i.e. x-rays, CAT scans, etc.). By the same token, conventional medicine is not always effective. After thousands of years, conventional medicine still cannot cure the common cold. In the 1800s, conventional doctors believed bloodletting would help cure diseases. Doctors now know that bloodletting is extremely dangerous, but it was thought to be the appropriate treatment at the time. There are over 2 million hospitalizations a year resulting from side effects of conventional drugs, and the number grows every year. In addition, over 60 million Americans are not covered with any type of health insurance, and they may not be able to afford conventional treatments. Some alternative treatments are expensive, but most of the therapies are cheaper than conventional drugs, which makes it more appealing to today's society.

In 1992, Congress established the Office of Alternative Medicine (OAM) as a part of the National Institutes of Health. The OAM receives grants to study the safety and effectiveness of herbal and dietary supplements. It has received millions of dollars to provide scientifically accurate studies to determine which herbs and supplements work. Although many people argue the OAM is wasting money, over 25% of all prescription drugs are derived directly from plants, so the studies will be useful for everyone. Seventy-five out of 125 (64%) medical schools in the United States offer courses on alternative medicine. Even Harvard Medical School offers alternative treatment courses to its students. There is certainly a trend towards bridging the gap between conventional and alternative medicine.

At the center of alternative medicine is China, which has been the birthplace of many alternative therapies. Many of the so-called alternative therapies in the United States are actually conventional treatments in China (i.e. acupuncture, etc.). Dr. William Prenskey, a renowned researcher, found an interesting coincidence while studying the Ming Dynasty in China. The Ming Dynasty saw the introduction of many new medicinal herbs. Naturally, many people began to call themselves “doctors.” The Ming Dynasty kept extremely detailed records about each herb and doctor. If the doctor could not help his patient at least 68% of the time, he was considered a “doctor by chance.” Amazingly enough, this 68% cut-off is still used in determining the “placebo effect” of a medicine. If the medicine does not work 68% of the time, then the patients who see improvement are merely experiencing the placebo effect.

The last hurdle for alternative medicine is the number of invalidated claims in the industry. Just as with anything else, no one should automatically accept or reject everything. There are some highly effective practitioners, but there are also charlatans. Many alternative practitioners do not have to be certified or licensed, so it becomes difficult to distinguish between the legitimate doctors and con men. The training for many therapies is lax, which results in sloppy doctors. In alternative medicine, the skill of the practitioner determines the effectiveness

of the treatment. If the practitioner is inadequate, then the treatment will be, too. Another issue is the black market for herbal supplements. As mentioned before, the herb kava is used as a recreational drug, and other “herbal ecstasies” are invading the drug market. This gives more imposters opportunities to beguile unsuspecting people, as well as give alternative medicine a bad reputation. The final issue is the adoption of alternative treatments into mainstream medicine. If an alternative treatments proves to be highly successful, it is then considered part of conventional medicine. Therefore, instead of alternative medicine being praised for its success, it is absorbed into conventional medicine.

Alternative medicine has made recent strides in dispelling many misconceptions, but it still has a long way to go to prove itself. With improved technology, we now have the capabilities of tracking the effectiveness of many of the proposed therapies. The legitimate therapies will rise to the front, and the ineffective treatments will fall by the wayside. All conventional medicine began as an alternative treatment, so perhaps one day some alternative treatments won't be alternative anymore.

Some Helpful Websites

American Association of Oriental Medicine

<http://www.aaom.org>

National Certification Commission for Acupuncture and Oriental Medicine

<http://www.nccaom.org>

Office of Alternative Medicine

<http://www.altmed.od.nih.gov>

American College of Traditional Chinese Medicine

<http://www.actcm.edu>

American Chiropractors Association

<http://www.amerchiro.org>

National Institute of Medical Herbalists

<http://www.nimh.org.utk>

American Academy of Reflexology

<http://www.massagedirect.com>

International College of Applied Kinesiology

<http://www.icakusa.com>

To search for invalidated claims:

<http://www.quackwatch.com>

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SENIOR PROJECT - APPROVAL

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I have reviewed this completed senior honors thesis with this student and certify that it is a project commensurate with honors level undergraduate research in this field.

Signed: Richard L. Townsend, Faculty Mentor

Date: 4-25-02

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