Complementary Alternative Medicine (CAM):

What is CAM and how does North America compare to Europe?
COMPLEMENTARY ALTERNATIVE MEDICINE (CAM):
WHAT IS CAM AND HOW DOES NORTH AMERICA COMPARE WITH EUROPE?

DISTRIBUTION IN PARTIAL FULFILLMENT OF REQUIREMENTS
FOR THE DEGREE OF
DOCTOR OF SCIENCE IN HOLISTIC MEDICINE

KELLY FINLAYSON
DA VINCI COLLEGE OF HOLISTIC MEDICINE
LARNACA, CYPRUS
MAY 2015
DISserTATION COMMITTEE

Dr George J Georgiou, Ph.D.,D.Sc (AM).,N.D.,M.Sc.,B.Sc

Chairperson

Dr Maria Georgiou,  Ph.D.,M.A.,B.A.

Committee Member

Approved by the Dissertation Committee

Da Vinci College of Holistic Medicine

Larnaca, Cyprus

April 2015

Dr George J Georgiou, Ph.D.,D.Sc (AM).,N.D.,M.Sc.,B.Sc

M.Georgiou

Dr Maria Georgiou,  Ph.D.,M.A.,B.A.
COMPLEMENTARY ALTERNATIVE MEDICINE (CAM):
WHAT IS CAM AND HOW DOES NORTH AMERICA COMPARE WITH EUROPE?

Copyright © 2015. All Rights Reserved.

By

Kelly Finlayson
Complementary Alternative Medicine (CAM) is a broad definition of a variety of treatment options which includes but is not limited to: alternative medicine used together with traditional Western medicine treatment in a belief that complements the treatment\(^1\). Therapies can vary between cultures, countries, state to state (province to province) and practitioners. This paper discusses what is the best definition of CAM, where did these therapies begin, what do citizens and health care professionals think about alternative therapies, what are the available complementary alternative therapies, how do individuals in Europe and North America use alternative therapies and where are the citizens of the world heading in their attitude towards complementary alternative treatments or holistic therapies.

History has shown the present day holistic practitioners that these therapies have been around for thousands of years; Native Americans, Ancient Greeks, Romans and Egyptians all have left a legacy to educate the population of their therapies for various ailments.

Therapies included under the umbrella of CAM: massage therapy, Traditional Chinese Medicine, acupuncture, religious or spiritual, yoga, light therapy, iridology and many others. Each therapy is defined and briefly explained.

Patients across the world are looking for: standardization in education for holistic practitioners, reliable resource to find qualified practitioners and coverage to help cover costs associated with complementary alternative therapies.

The attitudes of individuals are shifting towards integrating holistic practices into their everyday lives, patients want to have the best possible health care available to them; therefore making use of both complementary alternative medicine and traditional western medicine. Health care professionals in Europe have more training and are more open to recommending complementary alternative therapies than their counterparts in North America. Health care professionals and holistic practitioners in the future are going to have to be able to work together to provide patients with the best health care plan available, utilizing strengths from all areas of expertise.

\(^1\) En.m.wikipedia.org/CAM
# TABLE OF CONTENTS

Complementary Alternative Medicine: What is CAM and how does North America compare to Europe?

## CHAPTER I – INTRODUCTION
Definition of Complementary Alternative Medicine

## CHAPTER II – A BRIEF HISTORY OF COMPLEMENTARY ALTERNATIVE MEDICINE
North America: Native Americans and European Settlers
Romans, Greeks (Dioscorides), Ancient Egyptians

## CHAPTER III – EVIDENCE BASED MEDICINE: WHAT DOES THAT ENTAIL
Definition of Clinical Trials
Levels of Evidence Based Material
German E Commission

## CHAPTER IV – COMPLEMENTARY ALTERNATIVE MEDICINE AND HOLISTIC THERAPY DESCRIPTIONS
Acupuncture
Traditional Chinese Medicine
Ayurveda
Iridology
Bach Flower Remedies
Aromatherapy
Herbal Medicine – Phytotherapy
Live Blood Analysis
Homeopathy
Reflexology
Health care professionals’ attitudes.................................................................99

CHAPTER VIII – CONCLUSION: CAN NORTH AMERICAN CITIZENS OVERCOME THEIR
ATTITUDES TO HELP THEMSELVES TO A MORE HOLISTIC, INTEGRATED HEALTH CARE
SYSTEM..................................................................................................................104

BIBLIOGRAPHY.....................................................................................................107

APPENDIX A..........................................................................................................115

Informal Study: Hours spent studying alternative
therapies in Canada, 2014-0797.................................................................115
Complementary Alternative Medicine (CAM), what exactly does that mean? Why do countries differ in their attitudes towards CAM? This chapter will discuss the attitudes of both traditional Western medical health care professionals (example: doctors, nurses, pharmacists, veterinarians, dentists, etc) in Canada and the United States (North America) vs. Europe. The general public will also be considered in this discussion of North America vs. Europe regarding their attitudes towards the practice of CAM.

Alternative Medicine (AM) is defined as any practice that has been put forth as having the healing effects of medicine but is not based on evidence gathered using scientific methods. The definition of CAM includes but is not limited to: alternative medicine used together with traditional Western medicine treatment in a belief that complements the treatment. Therapies can vary between cultures, countries, state to state (province to province) and practitioners. The term alternative medicine is used in information issued by any public bodies in the United Kingdom, the United States and the commonwealth of Australia that is discussing any of the following, but not limited to: massage, acupuncture, herbalism or

2 http://www.nsf.gov/statistics/seind02/c7/c7s5.htm#c7s512a
3 En.m.wikipedia.org/wiki/Alternative_Medicine
5 http://www.fda.gov/Drugs/ResourcesForYou/Consumers/BuyingUsingMedicineSafely/MedicationHealthFraud/ucm207747.htm
phytotherapy, naturopathy and osteopathy. In chapter 3, a comprehensive list of complementary alternative therapies, used worldwide; which will also include a detailed description of each therapy.

AM and CAM also can fall under the term Holistic Medicine. The holistic medicine method approaches health and disease from many angles. This approach implies or suggests the patient should not only treat the illness; physical, emotional or medical, but rather the whole self to reach a higher level of wellness. For the purpose of this discussion, the terms alternative medicine, complementary alternative medicine and holistic medicine will be grouped together and will be deemed CAM from this point on.

According to the World Health Organization (WHO), “it is extremely important to create the conditions for the correct and appropriate use of CAM which, if used correctly, can contribute to the protection and the enhancement of citizens’ health and well-being.”

The Canadian Medical Association (CMA) and the National Center for Complementary and Alternative Medicine of the US National Institutes of Health, uses this working definition for CAM: “a group of diverse medical and health care systems, practices and products that are not presently considered to be part of conventional medicine.” The definition of conventional medicine or mainstream medicine can include the following but is not limited to; a general term for conventional healthcare based on the “Western model” of evidence-based practice for diagnosing and treating disease. Conventional (Traditional Western Medicine) medicine assumes that all physiologic and pathological phenomena can be explained in concrete terms,

---

7 http://www.eiccam.eu/pdfs/eiccambrochurecomplete.pdf
8 Canadian Medical Association, CAM policy, updates 2008. www.cma.ca
and uses the philosophy of best practice, which is the end result of a stream of objective
analyses which begin with nonhuman model systems, evolve through blinded studies and
statistical analysis of those results, and end with guidelines to which doctors adhere to achieve
optimal patient outcomes. These practices, as a general rule, uses synthetically produced
drugs, developed and pushed by the drug companies who spend millions of dollars to promote
their specific formulation to the physicians. The result is patients are bombarded by chemicals,
which can lead to having serious side effects, lab interactions (false negatives or positives),
drug-drug interactions, drug-herbal interactions and can be potentially worse off after taking a
chemical than they were before starting this course of treatment offered by their family
physician, the physician at the emergency room or walk-in clinic that has no knowledge of what
the patient is currently taking or what complementary alternative therapies are being used at
the time.

In 1999, The Council of Europe came to Resolution 1206: A European approach to non-
conventional medicines. The Parliamentary Assembly deemed there to be eight key points⁹:

1. The Assembly reaffirms the importance it attaches to conventional medicines whose
effectiveness has been proved scientifically and which form the basis of European social
protection systems. It notes, however, that alternative, complementary and non-conventional
forms of medicine are growing in importance in Europe and throughout the world. The extents
to which they are recognised and the legal status they enjoy vary greatly from one country to
the next.

⁹ Text adopted by the Standing Committee, acting on behalf of the Assembly, on 4 November 1999.
http://assembly.coe.int/Main.asp?link=/Documents/AdoptedText/ta99/ERES1206.htm
2. The best established forms include acupuncture, homeopathy, osteopathy and chiropractic. However, these are not alone among less conventional methods, some of which have been in existence for a very long time, and all of which respond to a demand. Patients themselves are increasingly calling for the use of different forms of treatment. This is a fact that cannot be ignored. The Assembly recognises the pre-eminence of conventional medicines; however, the various forms of medicine should not compete with one another: it is possible for them to exist side by side and complement one another.

3. In the health field, it is important to preserve the diversity of national legislation and practice that is one of Europe’s assets: people’s attachment to their own systems and traditions must not be called into question. Nevertheless, the Assembly believes that a common European approach to non-conventional medicine based on the principle of patients’ freedom of choice in health care should not be ruled out.

4. It welcomes the resolution adopted by the European Parliament on 29 May 1997 on the status of non-conventional medicine, which calls on the European Union to begin a process of recognising non-conventional forms of medicine after the necessary studies have been conducted and also to develop research programmes on the safety and effectiveness of these medicines.

5. The Assembly agrees that, in the current grey area of non-conventional medicine, it is necessary to separate the wheat from the chaff. The demands of public health and the right of individuals to health protection must come first. The limitations of non-conventional medicines must not be ignored nor underestimated. Support should not be given to dubious or intolerant
practices that would deny people and, in particular, children, the medical care their state of health demands. Establishing a legal framework for non-conventional medicine is a difficult undertaking, but it is preferable to being too liberal.

6. The Assembly believes that the best guarantee for patients lies in a properly trained profession, which is aware of its limitations, has a system of ethics and self-regulation, and is also subject to outside control. It would be unrealistic to wish to prevent the emergence of new professions in the health sector. The regulations that currently exist in certain European countries on the practice of one or other form of non-conventional medicine open the way for progress. The Assembly calls on the member states to model their approach on their neighbours’ experiments and, whenever possible, to co-ordinate their position with regard to these medicines.

7. The Assembly believes that in the future alternative or complementary forms of medicine could be practised by doctors of conventional medicine as well as by any well-trained practitioner of non-conventional medicine (a patient could consult one or the other, either upon referral by his or her family doctor or of his or her free will), should ethical principles prevail. Appropriate courses should be offered in universities to train allopathic doctors in alternative and complementary forms of treatment. The Assembly therefore calls on member states to promote official recognition of these forms of medicine in medical faculties and to encourage hospitals to use them.
8. Lastly, as knowledge of alternative forms of medicine is still limited, the Assembly calls on the member states to support and speed up the comparative studies and research programmes currently under way in the European Union and to disseminate the findings widely.

The Council of Europe has obviously given considerable thought to their position on complementary alternative therapies and has asked for more studies and information on CAM therapies, both the Canadian Medical Association (CMA) and the American Medical Association (MA) – appear to have had very little thought and has no real stand point on alternative treatments. This leaves the decision for CAM treatment referrals up to physicians who have either only personal experience, which may or may not be positive, or absolutely no knowledge whatsoever in holistic medicine. That could potentially be a serious mistake; patients will suffer from their physicians’ lack of understanding or knowledge. Patients may not tell their conventional physician that they are seeking an alternative therapy, which could lead to drug interactions, incorrect diagnostic testing (false positive or negative results) and lead to mistrust for both patients and healthcare professionals. Medical associations in North America need be spending more time and effort trying to expand their knowledge in holistic medicine to ensure that the patients’ safety and health care is at its optimal state.

CAM treatments cover a broad spectrum of therapies, including the well known such as Traditional Chinese Medicine (TCM) or massage therapy and the little known such as dance therapy or colour therapy. A brief history lesson regarding the progression of holistic therapies in North America and Europe help to understand where CAM therapies started from and how
these treatments were used in the past and how they may have shaped the future for CAM therapies.

Could population be one of the issues faced in the struggle to accept CAM therapies? Canada has a population of approximately 35.4 million people (April 2014)\(^{10}\), the United States has approximately 316.1 million people (July 2013)\(^{11}\) and Europe has an approximated population of 741.3 million (2014)\(^{12}\). There is a vast difference in populations between North America and Europe, but why the attitude difference with regards to CAM, and why is CAM more utilized by Europeans than their North American counterparts. Are regulations stricter? In neither Europe nor North America is there a regulatory board for each and every alternative, holistic therapy; each country/province/state has their own set of rules and regulations\(^{13,14}\). In North America, there has been a move toward ensuring that the more “socially acceptable” forms of CAM therapies (TCM, massage, naturopath and herbalism) are regulated by an association, usually controlled by a peer group of those practitioners, trying to ensure reliability in practitioners, promote education, continuing education and safety for patients – practitioners registered with these associations are required to have malpractice insurance, and to have obtained a certain level of education including hands on training supervised by a practitioner and a set amount of hours for learning their chosen craft.

---

10 [www.statcan.gc.ca](http://www.statcan.gc.ca), June 29, 2014
13 European Federation for Complementary and Alternative Medicine
14 Canadian Medical Association, CMA policy update 2008
Across Europe there are approximately 300,000 CAM practitioners\textsuperscript{15} practicing in various modalities (including: aromatherapy, naturopathy, massage therapy, reflexology, TCM and many more). In North America it is much harder to find even an approximation of the number of CAM practitioners as there is an enormously large number of “regulating bodies”.\textsuperscript{16} A regulating body is defined as: a public authority or government agency responsible for autonomous authority over some area of human activity in a regulatory or supervisory capacity.\textsuperscript{16} In North America, each modality of complementary alternative medicine can have up to 15 different “regulating bodies”; there doesn’t seem to be a consistent nor true regulating body for CAM. Anyone can claim to be a “natural” or “holistic” practitioner and have absolutely no training, therefore the best estimate that North American has is approximately 110,000 practitioners (massage, reflexology, naturopathy, aromatherapy). This number is based on over thirty-seven different websites stating that they represent CAM practitioners, and adding up the numbers (ensuring that there is no overlap) but I was unable to find an exact number of practitioners.

Alternative, holistic therapies encompass large, diverse and sometimes questionable or hokey\textsuperscript{17} methods, a comprehensive list and an explanation of therapies will be discussed in a later chapter. Regulation of holistic practitioners and standards of education need to be addressed in both North America and Europe, as well as the rest of the world this will allow that the general public and health care professionals to have a greater understanding and access to all complementary alternative therapies.

\textsuperscript{15} European Federation for Complementary and Alternative Medicine (EFCAM), index 2
\textsuperscript{16} En.wikipedia.org/wiki/Regulatory-agency
\textsuperscript{17} www.spirit-bristol.co.uk June 29/2014
CAM therapies may not have always been called Complementary Alternative Medicine, history has shown the current population across the globe that these therapies were actually considered mainstream in the past. A very short description of how some of these therapies were used and were passed down from generation to generation and also how the existing population may learn from the past, is discussed next.

In North America (this includes Canada and the United States), the healing traditions of Native Americans go back for over a thousand years; many indigenous tribes of North America learned that by mixing roots, herbs and other plant material, such as leaves and flowers, into topical compounds, liquids or inhalants, that various medical problems were healed. The healing practices of the Native Americans varied widely from tribe to tribe, based on regions/locations, the time of year (seasons), what phase the moon was in and a variety of other factors, which involved various rituals, ceremonies and a large wealth of healing knowledge. During these times, there were no absolute, concrete standards of healing; many of the Native Americans believed that health was an expression of the patients’ spirit and a continual process of staying strong mentally, physically and spiritually. This strength was brought together, as well as keeping harmony with themselves, their natural environment, their creator and the others around them, allowed them to maintain their health, keeping away illness and harm. Native Americans believe that all things in nature are connected and that spirits are responsible for
promoting health or for causing illness. Due to this belief it is imperative to heal the physical parts of the patient along with their emotional wellness, their harmony with the community and the natural environment around them.

Herbal remedies played an important role within the healing practices of the Native American culture, stretching above the patients’ aches and pains and into the realm of harmony and spirituality; but the tribes also used other forms of alternative medicine in the forms of: praying, chanting, ritual dances and ceremonies. These herbs and other natural products, such as animal parts, certain minerals/rocks or plant material, were gathered from surrounding environments by certain individuals in the tribe, usually called shamans, healers or the wise ones. When the early Europeans arrived in North America, these explorers or settlers were surprised to see the Native Americans recovering from illness and injuries that were considered fatal to the immigrating population. However, the remedies that had been part of the Native American’s lifestyle for so long were no match for the diseases that were brought over with the Europeans. Many of the Native Americans were not able to survive these new diseases (smallpox, the plague, etc), and due to the fact that the majority of the healing rituals, ceremonies and recipes were handed down via oral communication or storytelling, those important aspects of alternative medicine were lost.\(^{18}\)

Even after the decline of the use of herbal therapies from the Native American population, the settlers continued to use a variety of what we now know as CAM therapies. These traditions were brought over mostly from “the Old Country” and practitioners were either trained

\(^{18}\) http://www.legendsofamerica.com/na-medicine.html
physicians from Europe, which was a very limited number, or self-taught individuals, who lived in the colonies, who used alternative therapies. Most people in the colonies (America in the 1700s) were too far away from trained medical professionals and relied mostly on travelling physicians and the women of the towns and villages were often called in to deal with any medical concerns that arose. These situations included anything from pulling rotten or damaged teeth to childbirth. Herbs were used a great deal to provide relief from a variety of ailments, however one of the concerns was that there were no true recipes or guidebook and there was a great deal of conflict between practitioners, which led to a decrease in patient confidence and may have led to a higher mortality rate in the early settlement years in North America.

In Europe, alternative therapies have been in use for thousands of years, encompassing the Romans, the scholars and warriors— who travelled and conquered the continent of Europe, the Egyptians, the Greeks— their knowledge of herbal remedies surpassed any other countries and every ethnic group that ever lived in what we now call Europe. The introduction of homeopathy, herbal remedies, hypnosis, Bach flower remedies and iridology, and this is a limited list of what stemmed from discoveries made by Europeans in the world of alternative medicine.

Medicine in Ancient Rome, in this day and age would be listed as a combination of traditional medicine and complementary or alternative therapies, which combined a multitude of techniques using different rituals, herbs, plant material and tools. The medical tools that were introduced during this period included: scalpels, forceps, spatula, vaginal specula, bone drills,
male catheters and obstetrical hooks. There was a strong Greek influence on Roman medicine, Greek physicians such as Galen and Dioscorides gathered information, they worked on learning new uses for herbs, and writing on medicine during the Roman Empire, with a vast knowledge of hundreds of herbals\textsuperscript{19} recorded in a series of books.

One of the most celebrated Greek physicians, Dioscorides was born in Anazarbus, a small town that is located in what is now called Turkey. His most significant contribution was his collections of the five botanical books entitled \textit{De Materia Medica}. This collection of books becomes the foundation for all subsequent materia medicas for the next 1600 years across Europe. Approximately 80\% of Dioscorides’ material medica consists of plant medicines (phytotherapy) while the remaining is divided into mineral and animal. In 1976 there was a report that described the sources of Western medicines as the following: chemically synthesized 50\%, flowering plants 25\%, minerals 7\% and animals 6\%. Considering that chemically synthesized medicines are usually derived from plant material, Dioscorides’ gathered information is remarkably similar to todays’ standards.\textsuperscript{20}

The organization of his works follows the pattern of one plant, one chapter. Each chapter has the following information, laid out in the same organized fashion for each plant; this allows the reader a consistent flow of information: \textsuperscript{11}

1. Plant name, synonyms and picture.
2. Habitats.

\textsuperscript{19} http://en.wikipedia.org/wiki/Medicine_in_ancient_Rome
\textsuperscript{20} http://www.possumsal.com/Health/roman.html

4. Drug properties or actions.

5. Medicinal usages

6. Harmful side effects.

7. Quantities and dosages

8. Harvesting, preparation and storage instructions

9. Adulteration and methods of detection

10. Veterinary uses

Dioscrides classified drugs according to broad physiological categories of action, which is very similar to the organization of treatments in Traditional Chinese Medicine (TCM). Dioscrides’ therapeutic groupings by medicinal action have a kinetic, dynamic character: binding, softening, warming, cooling, drying, relaxing, concocting and nourishing. TCM therapeutically divides its’ medicinal actions into three broad categories: eliminative, regulating and supplanting or tonic. These are then divided into multiple sub groupings according to what is actually being regulated, supplemented or eliminated. He was a leader in the formation of both Western medicine and complementary alternative medicine, without his *Materia Medica* the modern medical world would not have evolved the way that it did.

The Ancient Egyptians were fairly well advanced in their diagnosis and treatments of ailments that plagued their country. The remedies used by the Ancient Egyptian physicians came primarily from nature and are still considered viable homeopathic treatments for a variety of ailments today. Diligent record keeping has allowed the modern world to translate information
from various Papyruses to learn the extent of the Ancient Egyptians’ knowledge of anatomy, hygiene, disease and healing. Therapies for a variety of ailments were outlined in the different Papyrus, some of which have survived to the present day and are being translated and recorded by anthropologists and archaeologist. These Papyruses contain what resources available to them and how they were utilized, which included: plant materials, minerals and animal products (which included urine, collected from sheep, horses and occasionally from exotic animals – foreign to Ancient Egypt). Explanations of how treatments were administered and how the products were dispensed – orally as tinctures, teas or in a pill-like form, topically, suppositories (rectally and vaginally) and enemas were reported in these documents.

While there were many ailments would have been difficult or impossible to treat, the Ancient Egyptians would have used the knowledge that they possessed to conduct rudimentary surgeries as well as rituals and prayers for healing. The Egyptians were able to treat many less serious conditions through the use of natural remedies. Many of the remedies are familiar, as they are used today as homeopathic remedies. Below are just a few examples of what the Ancient Egyptians used and are still in use today in modern Egypt and around the world:21

1. Pain relief – thyme
2. Laxatives – balsam apple, onions, parsley and dill
3. Digestive aids – sandalwood, garlic, juniper and mint
4. Asthma – honey and milk, sesame and frankincense
5. Chest pain – mustard seeds, aloe and juniper

---

21 http://www.ancient.eu/article/51/
6. Headaches – poppy seeds, aloe
7. Vomiting – mustard seeds to induce, and mint to stop the vomiting
8. Wound dressing – honey (for its’ natural antibiotic properties)
9. Anesthetic – poppy seeds
10. Epilepsy - camphor

Along with their strong faith in their gods, the Ancient Egyptians used their knowledge of the human anatomy and the natural world around them to treat a number of ailments and disorders effectively. Their knowledge and research is impressive still today, and their work paved the way for the study of Traditional Western medicine as well as complementary alternative therapies.

In all countries, or cultures there was a vast knowledge of phytotherapy or herbal remedies as well as spiritual or ritual therapies that were used for thousands of years before the “invention” of modern medicine. These individuals led the way for the future of what is today’s healthcare. However, along the way the world lost touch with a large portion of the knowledge that had been instituted, and complementary alternative therapies are just now beginning to make a re-emergence in today’s society.

The formation of regulated physician training, led to the decline of the use of CAM therapies in the EU and North America due to the inference that any form of treatment that was not scientifically proven was not appropriate for ones’ patients. In North America and in Europe, health care professionals in the past have been taught that if the science doesn’t prove that a specific treatment works for a specific disease state based on evidence based method then that
treatment is not worth using for a patient. This decision has been re-visited recently in the EU, as the complete well-being of each patient is now being looked at and evaluated; including their mental, physically as well as their spiritual health.

Does a belief in the spiritual or in religion make a difference in the patient’s ability to heal from an injury or have an ailment resolved? History shows that Native Americans, Ancient Egyptians, Romans and the Greeks, all used some form of ceremonies or spiritual content in their holistic practices. In the past there has been a decline in spiritual or religious activity throughout both North America and Europe, but there has been a renewed interest in this decade. Individuals, who were no longer interested in an organized religion, have made an attempt to re-introduce themselves to a religion, and while it may not be an organized religion they have made the move to embrace a more spiritual lifestyle.

History has had the ability to show the world that complementary alternative therapies have been used for thousands of years, even if the treatments were called something different, it was complementary alternative medicine therapies. Whether it was Native Americans or Ancient Egyptians, holistic practitioners can continue to learn from these influential cultures to improve and increase their current knowledge.
Traditional Western Medicine relies on evidence based medicine (EBM); this method is used to help healthcare professionals choose what is deemed the most appropriate therapy. The definition: the conscientious, explicit and judicious use of current best evidence in making decisions affected the care of each and every individual patient.\textsuperscript{22}

In 2003, delegates attending the Conference of Evidence-Based Health Care Teachers and Developers summarized EBM into a five step process that can be broadly shown as:\textsuperscript{23}

1. Translation of uncertainty to an answerable question and includes critical questioning, study design and levels of evidence.
3. Critical appraisal of evidence for internal validity that can be broken down into specific aspects:
   - Systematic errors as a result of selection bias, information bias and confounding
   - Quantitative aspects of diagnosis and treatment
   - The effect size and aspects regarding its precision
   - Clinical importance of results

\textsuperscript{22} http://www.ncbi.nlm.nih.gov/pms/articles/PMC2349778
\textsuperscript{23} En.m.wikipedia.org/wiki/Evidence_based_medicine
- External validity

4. Application of results in practice.


Clinical trials are done to establish evidence based medicine for Traditional Western Medicine.

There are a variety of clinical trials for prescription drugs, over the counter medications, new therapies (surgical, laser, invasive and non-invasive procedures) that must be done to be deemed EBM; these are done by research groups, teaching facilities, hospitals and by far the most common: drug companies.

There are a variety of different forms of experiments that are performed during a clinical trial.

A blind experiment is an experiment in which information regarding the test that might lead to compromised results is concealed from the tester, the subject, or both until after the test, bias may be intentional or unconscious. Single blind: information is withheld from the subjects to reduce the possibility of bias. Double blind: neither the subjects nor the individuals conducting the study know who is getting the “real” product vs. placebo. Triple blind: an extension of the double-blind design; the committee monitoring response variables is not told the identity of the groups. The committee is simply given data for groups A and B. The usual process is to have the groups randomized (sex, age, medical conditions, allergies, etc.) to help establish a group of individuals that represent best the average of that country. Complementary alternative therapies don’t necessarily rely on clinical trials; there are no major drug companies that want to invest that much money (millions upon millions) if the company cannot ensure that there will be a return on their investment.
In the United States there has been a task force, U.S. Preventive Services Task Force (USPSTF) that has been developed to help rank evidence about the effectiveness of Traditional Western Medicine:\textsuperscript{24}

- Level I: evidence obtained from at least one properly designed randomized controlled trial.

- Level II-1: evidence obtained from well-designed controlled trials without randomization.

- Level II-2: evidence obtained from well-designed cohort or case-controlled analytic studies, preferably from more than one center or research group.

- Level II-3: evidence obtained from multiple times series designs with or without the intervention. Dramatic results in uncontrolled trials might also be regarded as this type of evidence.

- Level III: opinions of respected authorities, based on clinical experiments, descriptive studies or reports of expert committees.

Within the above levels of evidence there are also categories of recommendations; recommendation for a clinical service is classified by the balance of risk vs. benefit for a broad spectrum of patients and the level of evidence on which the information is based.\textsuperscript{25}

\textsuperscript{24} U.S. Preventive Services Task Force (August 1989). Guide to clinical preventive services: report of the USPSTF
\textsuperscript{25} http://www.ahrq.gov/clinic/3rduspstf/ratings.htm
- Level A: good scientific evidence suggests that the benefits of the clinical service substantially outweigh the potential risks.
- Level B: at least fair scientific evidence suggests that the benefit of the clinical service outweighs the potential risks.
- Level C: at least fair scientific evidence suggests that there are benefits provided by the clinical service, but the balance between benefits and risks are too close for making general recommendations.
- Level D: at least fair scientific evidence suggests that the risks of the clinical service outweigh potential benefits.
- Level I: scientific evidence is lacking, of poor quality or conflicting, such that risk vs. benefit cannot be assessed.

The major drug companies, in the United States and Canada, spend millions upon millions of dollars each and every year to investigate, develop, run clinical trials, publish results and market their products to physicians, pharmacists and the general public via social media, television and radio. This can lead to very expensive synthetic chemicals being released to the public, without full knowledge of potential effects of the chemicals on the patients' bodies. At any given time, in the United States, there are multiple lawsuits against drug companies for complications due to the use of their "wonder drugs". These complications can vary from rashes to severe diarrhea, loss of hearing, increased risk of tuberculosis and other infections, increased risk of cancer, mental health disturbances (i.e. suicidal thoughts), heart attack, pulmonary malfunctions and even death. After being released in the general market, with the potential for
an enormous number of side effects, the drug companies are forced to take their "wonder
drug" off the market, causing them to lose huge amounts of money.

According to the FDA; a “drug is removed from the market when its risks outweigh its benefits.
A drug is usually taken off the market because of safety issues with the drug that cannot be
corrected, such as when it is discovered that the drug can cause serious side effects that were
not known at the time.”26 In the United States, there have been numerous drugs recalled or
taken completely off the market due to side effects that occurred when the prescription drug
was given to the general public. Examples of such prescription “wonder drugs” include25:

1. Accutane® (Isotretinoin); an acne medication that was recalled for increased risk of birth
defects, miscarriages, and premature births when used by pregnant women,
inflammatory bowel disease and suicidal tendencies. In response to criticism from
consumers and healthcare providers over the safety of Accutane® Roche initiated an
Accutane® Recall in terms of the U.S. market along with eleven other countries on June
29, 2009. Roche says that this was necessary due to competition from generics as well
as the expense of personal injury lawsuits they were faced with due to side effects.27
However, isotretinoin is still available throughout the world under generic names or by
its name brand in some countries.

In February 2010, Roche Canada issued the following advisory: there have been very
rare reports of severe skin reactions associated with the use of Accutane®. These

27 http://www.recallwarning.com/accutane.html
events by be serious in nature and could possibly result in disability, death or hospitalization. Severe skin reactions can begin with mild or non-specific symptoms such as malaise, fever, chills, headache, aching muscles, stinging eyes or sore throat. It can take up to three days for lesions to develop. The recommendation from the company is to stop the product immediately and make contact with your physician.\textsuperscript{28}

2. Bextra\textsuperscript{®} (Valdecoxib); a non-steroidal anti-inflammatory medication that was recalled for serious cardiovascular adverse events (like death, MI, stroke), increased risk of serious skin reactions (like toxic epidermal necrolysis, Stevens-Johnson syndrome, erythema multiforme) and gastrointestinal bleeding.

In 2005, the U.S.FDA requested Pfizer, Inc. to voluntarily withdraw valdecoxib from the market. This request is based on the following findings\textsuperscript{29}:

- The lack of any demonstrated advantages for valdecoxib compared with other non-steroidal anti-inflammatories currently available to the general public.
- The lack of adequate data on the cardiovascular safety of long-term use of valdecoxib, along with the potential increased risk of adverse cardiovascular events in short-term coronary artery bypass surgery trials that the FDA believes may be relevant to chronic use.

\textsuperscript{28} http://www.rochecanada.com/gear/glossary/servlet/staticfilesServlet?type=data&communityId=re753001&id=static/attachedfile/re7300002/re77300002/AttachedFile_10321.pdf

\textsuperscript{29} http://www.fda.gov/Safety/MedWatch/SafetyInformation/SafetyAlertsforHumanMedicalProducts/ucm150752.htm
3. There have been reports of serious and potentially life-threatening skin reactions, including deaths, in patients using valdecoxib. The risk of these reactions in individual patients is unpredictable, occurring in patients with and without a prior history of sulfa allergy, and after both short- and long-term use. Pzifer complied with the voluntary recall of Bextra®, and has discontinued the manufacturing of valdecoxib. Meridia® (Sibutramine); an appetite suppressant that was recalled for increased cardiovascular and stroke risk.

In 2010, the U.S. FDA recommended, based on new data from the Sibutramine Cardiovascular Outcomes (SCOUT) trial\(^\text{30}\), which demonstrated a 16% increase in risk of major adverse cardiovascular events (a composite of non-fatal heart attack, non-fatal stroke, resuscitation after cardiac arrest and cardiovascular death) in patients treated with Meridia® compared to patients taking a placebo. After the data was reviewed, the FDA concluded that the risk for an adverse cardiovascular event from sibutramine in the general population studied outweighed any benefit from the modest weight loss observed with the drug. The SCOUT trial was a randomized, double-blind, placebo-controlled multicenter trial that was conducted between January 2003 and March 2009 in Latin America, Australia and Europe. The study population was approximately 10,000 men and women, with a classification of an obese BMI, a history of cardiovascular disease and/or type 2 diabetes mellitus with at least one other cardiovascular risk factor. The results indicated that there was a 16% increase in the relative risk of a

\(^{30}\) http://www.fda.gov/Drugs/DrugSafety/ucm228746.htm
cardiovascular event in the group taking sibutramine compared to the placebo group.\textsuperscript{31} Abbott voluntarily withdrew sibutramine and ceased manufacturing.

The other concern is that the pharmaceutical companies pushing prescription medications that have not been approved by the FDA, in the United States, and this is putting patients at an increased risk of serious side effects. Examples of these medications include: Quinine sulfate drug products – 665 reports of adverse events, including 93 deaths; Ergotamine drug products – labelling omitted critical warnings about potential for serious and possibly fatal drug-drug interactions; hydrocodone products – inadequate safety related labelling or improperly suggested it was safe for young children.\textsuperscript{32} The FDA has serious concerns that drugs marketed (via television, radio, print or social media) without required FDA approval may not meet modern standards for effectiveness, safety, labeling and quality. Physicians, healthcare practitioners and consumers, cannot assume that all marketed drugs have been found by the FDA to be safe and effective. For a variety of historical reasons, some drugs, mostly older products, continue to be marketed illegally in the U.S. without required FDA approval. The manufacturers of unapproved drug products have not received FDA approval and do not conform to a monograph for making over-the-counter (OTC) drugs. The lack of evidence demonstrating that these unapproved drugs are safe and effective is a significant public health concern\textsuperscript{33}. The risk is not only for patients who may take the non-approved pharmaceuticals,
the U.S. FDA is working to take unapproved animal medications off the market, writes Martine Hartogensis, DVM, Deputy Director, Office of Surveillance and Compliance at FDA's Center for Veterinary Medicine. Companies that bypass the drug-approval process could endanger not only the animals that receive unapproved drugs but the people who handle the unapproved drugs or eat food from animals treated with them. The agency recently sent warning letters to several marketers, distributors, and manufacturers of unapproved animal drugs, with more expected to be issued in the coming year\textsuperscript{34}. Enforcement actions may include seizure of products or injunctions against manufacturers and distributors of unapproved drugs.

This, in turn, means they are under pressure to increase the sales of their other synthetic chemicals and increase the speed by which the new experimental drugs get pushed throughout the EBM process. This could lead to the risk of drugs being launched into the marketplace with an even higher risk of side effects, with potentially even more serious health issues. There is also the concern regarding who or what the drug is being tested on: are any animals being subjected to untested agents and potentially having horrendous side effects or even death. There is a potential that college students, who need the money, volunteering to be guinea pigs at a drug testing facility; are those individuals fully aware of what they are getting themselves into or are they looking at the short-term monetary incentive.

The lawsuits may or may not be settled out of court. However settled, these lawsuits cost the drug companies a considerable amount of money as well as a loss of respect from patients, physicians, nurses, pharmacists and the holistic practitioner who may have been contemplating

\textsuperscript{34} http://blogs.fda.gov/fdavoice/index.php/2015/04/fda-to-industry-lets-increase-the-availability-of-safe-effective-animal-drugs/
the use or suggestion of a synthetic drug made by the drug manufacturer. The implied message of a recall, of course, is that the drug is harmful in some way.

The FDA is supposed to be in place to help ensure that the general population is not being subjected to inadequately studied prescription medications. Prior to 1992, the FDAs’ budget was paid for by the US Treasury, basically the funding came from individuals and companies paying their taxes and a set amount was allocated to the FDA.\(^3^5\) The Prescription Drug User Fee Act became a law in 1992 in the US. PDUFA allows the FDA to collect fees from the pharmaceutical companies who are filing new drug applications. The Act was created due to a response from complaints among consumers, the pharmaceutical industry, health care professionals that the FDA drug approvals were taking too long. The FDA said that without more money, there wouldn’t be enough staff to process the new requests. Therefore PDUFA, requires the following to be given to the FDA: the fee for filing a new drug application (NDA) that requires clinical data is $1,841,500. For an application that does not require clinical data, the fee is $920,750. This is putting the FDA in the pockets of the pharmaceutical industry, they have been accused of kowtowing to the industry, approving drugs that should not have been approved or allowing the committees assembled to review and approve NDAs to be racked with conflicts of interest.\(^3^6\) The FDA is seeking an extra $821 million for their budget, 94 percent, or $770 million, would come from user fees paid by the pharmaceutical industry.\(^3^7\) By allowing this practice of having the pharmaceutical companies pay for the services provided by the FDA,

---

37 http://articles.mercola.com/sites/articles/archive/2013/05/01/fda-budget-increase.aspx
it appears as if the FDA is being potentially “bought” by the pharmaceutical companies and leads to the question: is the patients’ best interest or safety still the main focus of the FDA?

Despite all the studies done by the major drug companies, there will always be risks associated with taking medications. Patients (and their health care practitioners) need to be confident that they have full knowledge available to be able to make an informed decision. Is evidence based medicine the one and only way to ensure that patients are getting the best health care possible? Traditional Western taught physicians will most likely say “Yes, if it hasn’t been proven by multiple randomized trials – I don’t think it (it being any sort of CAM) will work and I don’t want to waste my time nor my patients on a bunch of unproven who-ha”. There has been some work done to help improve the “scientific” approach to alternative medicine but studies are small and sporadic, there are no large pharmaceutical companies rushing out to fund research in alternative medicine.

However, the German Commission E is a scientific advisory board of what is the German equivalent of the FDA, formed in 1978. The commission is in charge of giving scientific expertise for the approval of substances and products used previously in folk, traditional and herbal medicine. The German Commission E become world renowned in the 1990s for compiling and publishing three hundred and eighty monographs evaluating the safety and efficacy of herbs that are used for licensed medical prescribing in Germany, and these monographs were imported into the US in 1998 by the American Botanical Society.38

Three different types of monographs were published which determined how the herb would be regulated in Germany: approved, neutral, and unapproved. 'Approved' monographs allow for the use of the herb as a non-prescription drug; 'Neutral' monographs do not endorse a therapeutic benefit but still permit the sale of the herb without safety concern; 'Unapproved' monographs prohibit the normal sale of the herb because the risk of using the herb is deemed high.  

There have been some criticisms directed towards the monographs put forth from the Commission, not only from Traditional Western physicians but also from well educated and knowledgeable herbalists and holistic practitioners. Criticisms include: the monographs are difficult to understand, failure to include some of the most basic herbs in any herbalist’s toolkit and lack of good referencing. Many of the herbs missing from the monographs are highly regarded herbs from Africa, North America and Asia (Goldenseal, Gotu Kola and Cramp Bark are a few examples).

The expert panel’s investigation was heavily relied on literature reviews of existing studies to determine the efficacy and safety risk. This has led to some relatively harmless herbs to be classified as “unapproved” due to the issue of a lack of published literature at the time for the commission to appropriately evaluate the herb. Unfortunately as well, the monographs sometime fail to list well-known uses, side effects, herbal dosage information is potentially insufficient or confusing and contraindications.  

The German Commission E has begun the journey to help increase awareness of the scientific “proof” of herbs but these monographs,  

---

31 http://www.herbal-software.com/german_commission_e_monographs.htm
along with other papers/studies of herbs, must be continuously updated and evaluated to ensure that all the pertinent information is given to practitioners and their patients. Pharmaceutical manufactures do not realize the potential that herbal remedies have, if the manufacturers expended an effort to learn more about complementary alternative therapies, herbalism in particular, it many open their eyes to a whole new realm of ideas, concepts, therapies and customers – therefore potentially more money for them, less lawsuits and potentially less side effects and a better, safer, more holistic lifestyle for patients. Despite having alternative medicine around for more than a thousand years, there are many individuals who will not accept that there is more to learn regarding the subject and think the only way to improve health outcomes for patients is to introduce more xenotoxins into our bodies.
CHAPTER IV

COMPLEMENTARY ALTERNATIVE MEDICINE AND HOLISTIC THERAPY DESCRIPTIONS

The term complementary alternative therapies or alternative medicine are used interchangeably in some countries, anything that doesn’t fall under the Western Traditional Medicine umbrella is deemed AM or CAM in both Europe and North America. There are a vast variety of therapies that do not fall under that traditional medicine (term used to describe the treatment of medical conditions with medications, by doctors, nurses and other conventional healthcare providers who employ methods developed according to Western medical and scientific traditions, which relies heavily upon industrially produced medications)\textsuperscript{40}.

A major challenge in studying the field of complementary alternative medicine is the lack of consensus regarding its definition. There is a not a universally agreed upon definition as to what CAM is and many inconsistencies exist within the market, in both North America and Europe. The emphasis on the majority of CAM therapies is on the natural healing ability of the patients’ own body versus the emphasis on drug therapy or technology for healing in traditional Western medicine. Some of complementary alternative medicines most important integration is: prevention is a primary concern, the focus is treating the whole person, all treatments are

\textsuperscript{40} http://www.wisegeek.org/what-is-western-medicine.htm
highly individualized, therapies are designed to support the natural healing process of the patients’ body and treatments are aimed at the causes of illness rather than the symptoms.\textsuperscript{41} In this chapter, a comprehensive discussion of various complementary alternative therapies will be defined and explained in detail. Therapies vary from country to country, even region to region within a country; even if the treatments appear to be similar there will be cultural differences, which may be based also upon where the holistic practitioner received their training and where they are practicing and the individual patient that is receiving the treatment.

As the number of complementary alternative therapies available to patients continues to grow, so does the research done for these therapies. Due to the ever increasing list of complementary therapies available, the following therapies are not inclusive; and the complied therapies that are listed below include research done by professionals and/or practitioners but will also mention other complementary therapies briefly, without the research done by practitioners in that field of alternative therapy.

ACUPUNCTURE

Acupuncture is a system of healing that has been practised in China and other Eastern countries for thousands of years but has become more recognized and a mainstream therapy in Europe and North American in the last 10 years. Focusing on improving the overall well-being of the patient rather than treating just the specific symptom, traditional Chinese philosophy states

\textsuperscript{41} http://www.cwru.edu/med/epidbio/mphp439/complimentary_meds.pdf
that our health is dependent on one’s motivating energy – known as Qi – moving in a balanced way through a series of meridians beneath the skin.\textsuperscript{42}

Yin and Yang, equal and opposite qualities are what Qi is based upon, when the two become unbalanced illness can result. The insertion of fine needle into specific points along the bodies’ meridians can stimulate the body’s own healing response and restore the natural balance of Yin and Yang, therefore the flow of Qi has been returned to normal and the illness may then be healed. The flow of Qi can be disturbed by a multitude of factors: emotional states (which includes stress, anger, anxiety, grief or fear), weather conditions (pending storms, barometric pressure or humidity), infections, poisons, hereditary, poor nutrition and trauma (emotional or physical). Treating the whole person to recover the equilibrium between emotional, spiritual and physical aspects is the principle aim of acupuncture.

North American practitioners of acupuncture incorporate medical traditions from China, Japan, Korea and other Eastern countries. The acupuncture technique that has been most studied scientifically involves penetrating the skin with thin, metallic needles that are manipulated by the hands or by electrical stimulation.\textsuperscript{43}

Acupuncture has been shown to have an improvement in decreasing anxiety levels in adults; N. Errington-Evans published a study in Acupuncture Medicine.\textsuperscript{44} A group of adults were identified with chronic non-responding anxiety symptoms that had repeatedly accessed treatments through their physician, such as cognitive behaviour therapy and medication, but

\textsuperscript{42} European Federation for Complementary and Alternative Medicine (EFCAM), index 2
\textsuperscript{43} Complementary and Alternative Medicine in Canada: Trends in Use and Public Attitudes, 1997-2006
\textsuperscript{44} http://www.ncbi.nlm.nih.gov/pubmed/?term=Errington-Evans%20N%5BAuthor%5D&cauthor=true&cauthor_uid=25595195
with no effect, these patients made heavy use of health service resources that were available to them with no beneficial outcome. This study aimed to test the effect of an acupuncture formula, using forty participants from a psychiatry waiting list who were randomised into two groups. Group one: received ten weeks of acupuncture at PC6, HT7 and LR3 (specific acupuncture points on the body), and group two was the control group, who then also received acupuncture, both groups were then followed for an additional ten weeks after treatment.

The results showed that the anxiety scores in the acupuncture group from 57.7 (SD 13.1) to 38.8 (12.0) and the scores in the control group decreased from 61.5 (11.6) to 6.6 (11.7). This shows that the difference in receiving acupuncture treatment quickly is highly significant (P<0.0001) for decreasing chronic patient anxiety that have proven resistant to other forms of treatment. The improvements were maintained after the ten week follow up in both groups.\textsuperscript{36}

Acupuncture has become a “mainstream” form of complementary alternative medicine used in Europe\textsuperscript{34} and has been used in China for thousands of years with positive results.\textsuperscript{35}

TRADITIONAL CHINESE MEDICINE (TCM)

With a history of 2000 to 3000 years, Traditional Chinese Medicine (TCM) has formed a unique system to diagnose and cure illness. The TCM approach is fundamentally different from that of Western medicine. In TCM, the understanding of the human body is based on the holistic understanding of the universe as described in Daoism, and the treatment of illness is based primarily on the diagnosis and differentiation of syndromes.
Qi (or Chi) acts as a kind of carrier of information that is expressed externally through jingluo system. Traditional Chinese medicine treatment starts with the analysis of the entire system, and then focuses on the correction of pathological changes through readjusting the functions of the zang-fu organs.\(^4\) The balance of Yin and Yang in TCM is the goal of the practitioner. Practitioners unblock Qi by the use of primarily acupuncture or acupressure.

Evaluation of a syndrome not only includes the cause, mechanism, location, and nature of the disease, but also the confrontation between the pathogenic factor and body resistance. Treatment is not based only on the symptoms, but differentiation of syndromes. Therefore, those with an identical disease may be treated in different ways, and on the other hand, different diseases may result in the same syndrome and are treated in similar ways. Treatment options include: acupuncture, acupressure; which uses the same principles as acupuncture but without the use of needles, herbal medicines (tea, capsules, tablets, tinctures and topical applications.)

A recent study that was conducted in 2013 regarding treatment of acid reflux using both acupuncture and TCM, and the results are outstanding, researchers Hanhua, Li and WAH, Lau May “Ban Xia Xie Xin Tang combined with abdominal acupuncture for the treatment of gastroesophageal”\(^4\), published in *Contemporary Medicine* 3, 2013. A group of 100 patients were randomly split evenly into two groups. One group received standard western biomedicine medical care and the other group received Chinese medicine acupuncture and herbal medicine. The acupuncture and herbal medicine group had a 92% efficacy rate and the biomedicine group

---

\(^4\) [http://www.tcmpage.com/](http://www.tcmpage.com/)

had a 76% efficacy rate. The acupuncture and herbal medicine group showed a significant improvement in heartburn, chest pain and acid reflux symptoms over the biomedicine group. The researchers concluded that local abdominal acupuncture points combined with the herbal formula Ban Xia Xie Xin Tang is effective for the treatment of gastroesophageal reflux disease.\textsuperscript{46}

AYURVEDA

Ayurvedic medicine is a system of Hindu traditional medicine native to the Indian subcontinent and a form of alternative medicine. The use of plant based medicines (derived from leaves, roots, seeds barks and fruits) and treatments are used commonly in Ayurveda. Some animal products may be used (milk, gallstones and bones); also fats are used for external use and consumption. Ayurvedic physicians regard mental and physical existence as well as personality as a unit; each of these units has the ability or capacity to influence the other unit.

Ayurveda has historically taken the approach of enumerating bodily substances in the framework of the five classical elements (earth, water, fire, air and aether). Also, there are seven basic tissues (dhatu), they are blood (rakta), fat (meda), plasma (rasa), muscles (mamsa), bone (asthi), marrow (majja) and semen (shukra).\textsuperscript{47} Diagnosis is determined by eight ways: Nadi (pulse), Mootra (urine), Mala (stool), Jinvha (tongue), Shabda (speech), Sparsha (touch), Druk (vision) and Aakruti (appearance).\textsuperscript{48}

Saptarangyadi Ghanavita, is a formulated Ayurvedic compound that consists of herbs with anti-diabetic potential. Diabetes mellitus is a persistent health problem where the body does not

\textsuperscript{46} En.wikipedia.com/Ayruveda
\textsuperscript{47} https://www.ncbi.nlm.nih.gov/pubmed/11253416
produce the insulin needed to maintain a healthy state; this health concern requires new strategies to improve health and a multifaceted approach to treatment. K.S. Singh et al., provided research to evaluate the hypoglycemic and anti-hyperglycemic activities of Saptarangydi Ghanavati.⁴⁹

This study used Swiss albino mice divided into three groups. For hypoglycemia, group one: normal control, group two: test drug and group three: standard control group. For anti-hyperglycemic activity, the mice were divided into four groups, group one: water control, group two: negative control, group three: test drug and group four: standard control group. The test drug was Saptarangydi Ghanavati suspended in water and administered to the mice at the dose of 400 mg per kg. The reference standard was the drug Glibenclamide in the dose of 0.65mg per kg. The conclusion that Singh found was that the Ayurvedic compound had moderate hypoglycemic and anti-hyperglycemic effect when dealing with Diabetes mellitus.⁴¹

IRIDOLOGY

Iridology is a technique that uses patterns, colours and other characteristics of the iris that is examined to determine information about a patient’s systemic health. These practitioners use specialized equipment to view the patients’ eyes, after making their observations and compiling a picture of the patients’ eyes, these observations are then matched to iris charts, which divide the iris into zones that correspond to specific parts of the human body. The eyes are seen as the windows into the body’s state of health by iridologists.

The iris charts are used to distinguish between healthy systems and organs in the patient’s body, by making the observations and matching certain shapes, colours and distinguishing lines, the iridologists are able to see which organs may be inflamed, overactive or in distress. By addressing the patients’ eyes, there is a realm of knowledge that can be ascertained such as susceptibility towards certain illness, predicts later health problems or can reflect on past medical problems.

Research is on-going in the field of iridology. John Andrews & colleagues, Dr. Andrews is recognized for his research and work in iridology and is a regular lecturer on four continents and throughout the United Kingdom\textsuperscript{50}, and are currently actively involved in researching, documenting, pioneering and presenting new material pertaining to the following aspects of modern iridology understanding and inner pupillary border (IPB) assessment\textsuperscript{51}. Iridology has a basis of official scientific and medical research in such countries as South Korea, Russia, Romania, Belarus, Latvia & the Ukraine for many decades. Many research and results have been sponsored and accepted officially by health departments and hospitals in these countries\textsuperscript{52}. In 1996 and 1997 doctors in South Korea conducted a great deal of iridology research with the BEXEL-Irina Iridology computer system. This was based on Korean and Russian research over the decades and is even now being trialled in hospitals and clinics for reliability of diagnostics and analysis from the iris. One interesting finding was that the computer had extremely high percentages of reliability in all areas, except for the immune system.\textsuperscript{40}

\textsuperscript{50} http://www.johnandrewsiridology.net/research.htm
\textsuperscript{51} http://www.johnandrewsiridology.net/research/Iridologyin21century.pdf
\textsuperscript{52} http://www.johnandrewsiridology.net/research/IntroductiontoIridology.pdf
Dr. Edward Bach was a traditionally trained physician in England, born on September 24th, 1886, who later in life pursued his passion of studying nature and the outdoors. Flower essences are the vibrational imprint of particular flowers or plants prepared in liquid form. Every item in nature has its own unique energy vibration, each flower or plant has their own different energy vibrations or imprints, which is also called ‘etheric essences’.

The vibrational pattern of each flower can be imprinted in pure water through certain preparation methods, the two practices involves the infusing of fresh flowers in glass bowl of spring water sitting in bright sunlight or by boiling the plant. The pure water then takes on the etheric vibration of the individual flower, which then results in what Dr. Bach termed a ‘flower essence’.

Each patient is asked to fill out the Bach Flower Remedy Questionnaire; this document is to help the practitioner to determine which Bach Flower Remedy is the most appropriate therapy for their current medical ailment or condition and also to help determine if this is an acute or chronic condition. There are 38 Bach remedies for a variety of ailments, dosages vary depending on whether the condition is chronic or acute – generally the average dose in 4 drops, 4 times per day under the tongue or in a glass of water. Essences may also be used in bath water, room spray or a body spray.
The Bach Center has investigated to efficacy of Bach Flower Remedies using a resource of literature reviews which used randomized controlled studies. One such resource is paper that has reviewed nine studies, using such independent databases such as Medline, Embase and AMED. The studies that were reviewed were from 1979 to 2005, covered children, pregnant women and adults, anti-anxiety to ADHD. Based upon the reviews, the author concluded that Bach Remedies are a form of complementary medicine that has been supported by the extensive clinical, lay use and medical studies that attests to their value in modern medicine.

AROMATHERAPY

Aromatherapy is the treatment or prevention of disease by the use of volatile plant materials, known as essential oils, for the purpose of altering a patient’s mood, mind, health or cognitive function. Pain, anxiety reduction, enhancement of energy and short-term memory, relaxation, hair loss prevention and reduction of eczema induce itching are also other stated uses of aromatherapy.

The three main modes of application of aromatherapy include the follow:

- Direct inhalation: for respiratory disinfection, decongestion or expectoration as well as potential psychological effects.
- Topical application: general massages, baths or compresses.
- Aerial diffusion: environmental fragrancing or disinfection.

Research was done in Tehran, Iran as anxiety is the most common emotional response in women during delivery, which can be accompanied with adverse effects on fetus and mother.\textsuperscript{55} The objective of this particular study was conducted to compare the effects of aromatherapy with rose oil and warm foot bath on anxiety in the active phase of labor. This clinical trial study in Iran was performed after obtaining informed written consent on one hundred and twenty pregnant women randomly assigned into three groups.

The experimental group one received a 10-minute inhalation and footbath with oil rose. The experimental group two received a 10-minute warm water footbath. Both interventions were applied at the onset of active and transitional phases of labour pain. The control group, received routine care in labour, no aromatherapy was given. Anxiety was assessed using visual analogous scale at onset of active and transitional phase of labour pain before and after the intervention. Statistical comparison was performed using SPSS software version 16 and $P < 0.05$ was considered significant. The results of this study conducted by M. Kheirkhah, were as follows; anxiety scores in the intervention groups during the active phase of labour were significantly lower than the control group (P<0.001), also noteworthy is that the anxiety scores before and after aromatherapy intervention during the transitional phase of labour were also significantly lower than the control group (P<0.001).

The conclusion of the study: using aromatherapy along with a footbath will reduce significantly anxiety during both the transitional and active phase of labour.\textsuperscript{45}

\textbf{HERBAL MEDICINE – PHYTOTHERAPY}

\textsuperscript{55} http://www.ncbi.nlm.nih.gov/pubmed/25593713
Traditional phytotherapy is a synonym for herbalism: which is the study of the use of extracts of natural origin (i.e. plants – this includes: flowers, leaves, fruits and roots) as medicines or health-promoting agents. Phytotherapy medicines differ from plant-derived medicines in standard pharmacology. Where standard pharmacology isolates an active compound from a given plant, phytotherapy aims to preserve the complexity of substances from a given plant with relatively less processing.

Herbalism can be used for any ailment; there is a variety of how patients can partake of the herbs that would benefit them the most. Tinctures, syrups, teas, capsules, compresses, topical, powders are the most common forms that an herbalist would recommend to their patients.

There is research being done across the globe on the benefits and effectiveness of phytotherapy. In China there was a study, by S. Tu et al, done for patients who were having withdrawal symptoms from taking opioid drug therapy. Chronic opioid abuse can cause damage to the dopamine neurons; however there is no proven drug therapy to reverse the damage caused by the opioids. The Jitai tablet is a traditional Chinese herbal formulation that is most commonly used in China for the treatment of opioid addiction. This particular study used a spontaneous withdrawal rat model using morphine. The Jitai tablet was given pre and post treatment and was shown to alleviate the wet dog shakes and episodes of writhing, inhibited the morphine induced decreases in dopamine transport in the rats. These results support the use of phytotherapy in opioid withdrawal treatment.

Researchers, Mohd Zainudin, Zackaria and Megat Mohd Nordin were pivotal in looking into hypertension in rats and the effects of Piper sarmentosum had in these rats\textsuperscript{57}. The National Health and Morbidity Survey in 2011 estimated that 35.1\% or approximately 5.7 million of Malaysian adults aged 18 and older suffer from hypertension. Studies showed that oxidative stress and low availability of nitric oxide causes an increase in vascular wall tension and increase blood pressure. Piper sarmentosum or PS, a traditional Malay herbal plant is well known for its high antioxidant content, antioxidants have been shown to be useful in improving cardiovascular diseases in particular hypertension. This study was used to determine the effect of PS leaves aqueous extract (Kadukmy™) on the blood pressure, nitric oxide levels, oxidative stress markers and serum cholesterol level of the hypertensive rats. The rats were treated for 28 consecutive days and their blood pressure was measured weekly. Results: a significant reduction in systolic blood pressure, diastolic blood pressure, mean arterial pressure, an increase in nitric oxide levels and a reduction of total cholesterol in the rats treated with PS. (Kadukmy™). This is an exciting new breakthrough (published in 2015 – *BMC Complementary and Alternative Medicine*) for patients who suffer from hypertension, further research is needed but the preliminary results are positive.

Herbal therapy is not only used for the human population. There is an increasing amount of research being looked into for animals. Intensive fish farming systems are often associated with higher stocking density and massive use of artificial feed.\textsuperscript{58} Outbreaks of bacterial, fungal and parasitic diseases are limiting factors for fish farming, this in turn means that producers

\textsuperscript{57} http://www.ncbi.nlm.nih.gov/pubmed/25887182
\textsuperscript{58} http://www.ncbi.nlm.nih.gov/pubmed/25620601
have to make use of massive amounts of pesticides, antibiotics and disinfectants to help control mortality and avoid huge economic losses. Due to the fact that there are adverse effects on the aquatic environment, the fish themselves and human health; this therapy has been heavily criticized. The use of a variety of herbal therapies within animal production has shown promise; it is natural and biodegradable and has antimicrobial activity against various pathogens. 49

Herbal therapy use is currently being researched and the results are looking incredibly exciting for holistic practitioners, for both human and animal patients.

LIVE BLOOD ANALYSIS

Live blood analysis or for a short form LBA, is the analysis of living blood under a powerful microscope connected to a camera so the technician can clearly see what your blood is trying to tell you at a cellular level. Due to the fact that the condition and quality of the red blood cells in ones’ body will have a direct impact on the patients’ present and future health, with specific disease states and stress appearing in the blood potentially many years before they manifest in the patient’s body 59. LBA can potentially detect a disease very early on leading to the idea that live blood analysis can be the ultimate preventative tool available.

Live blood analysis testing is carried out by obtaining a drop of blood from a finger tip using a sterile lancet. The blood is then placed on a microscope slide, covered with a cover slip to prevent drying, and immediately observed under the microscope. The microscope used is a powerful ‘Darkfield’ type which allows an almost three dimensional look at the blood.

blood is magnified up to 1000 times. The majority of technicians prefer that a video camera is
hooked up to the microscope so that the patient and technician watch the entire procedure on
a monitor and can “freeze frame” or print out a picture of what the technician observes for
further research. During the testing, the technician will be able to see the activity of the
patients’ blood including: white blood cells, plasma, red blood cells, plasma, bacteria, crystal,
yeast and more.

A pilot study done by Teut, Ludtke and Warning designed to help to test the interobserver
reliability and test-retest reliability of two experienced darkfield specialists who had undergone comparable training in Enderlein blood analysis. During this experiment both observers assessed 48 capillary blood samples from 24 patients with diabetes. The observers were mutually blind and assessed their findings according to a specific item randomization list that allowed observers to specify whether Enderlein structures were visible or not. This pilot study found that it was difficult to have a standardized reading and therefore requires more studies to be done by trained technicians to help validate this potentially life altering alternative medicine practice.

HOMEOPATHY

Homeopathy is derived from the Greek words *homeo*, meaning similar, and *pathos*, meaning suffering or disease. Key concepts of homeopathy include:

---

60 http://www.ncbi.nlm.nih.gov/pubmed/16862741
- Seeks to stimulate the body’s defense mechanism and processes so as to prevent or treat illness.
- Treatment involves giving very small doses of substances called remedies (produce the same or similar symptoms of illness in healthy people if they were given in larger doses).
- Treatment is individualized, remedies are selected according to a total picture of the patient including; emotional and mental states, symptoms, lifestyle and other factors. The homeopath uses repertories to select the appropriate therapy.

Samuel Hahnemann, a German doctor, developed the main theories of homeopathy in the early 1800s based on the Law of Similars (like cures like). Hahnemann believed the cause of the disease were phenomena that he termed miasms, the remedies are prepared by repeatedly diluting the chosen substance in alcohol or distilled water followed by forceful striking on an elastic body,61 which is called the mother tincture. The mother tincture is then used, with further dilution with alcohol or distilled water, the patients are to place anywhere from one to ten drops of the tincture on their tongues, once to four times daily for a specified amount of time. Generally for acute medical issues, treatment is given for five to seven days.

Studies for homeopathy treatments are numerous and too many to examine and evaluate. One study conducted K. Hanif et al,62 looked at Lycopodium clavatum (Lyc). Lyc is a widely used homeopathic medicine for urinary, digestive and liver disorders. It had recently been found

---

that there was acetyl cholinesterase (AchE) inhibitory activity in Lyc alkaloid extract, this is important in dementia disorder. The end result, suggests that homeopathic Lyc may be a useful tool in the treatment of memory impairment due to its beneficial effect on cerebral blood flow, decreasing the intensity of memory impairment and slowing down the progression of the impairment.⁵¹

In 2008, Mahmoudian et al, conducted a descriptive cross-sectional study on 125 patients in Isfahan, Iran. The goal of this study was to measure the satisfaction of patients undergoing homeopathic therapy.⁶³ The patients involved in this study were at least 15 years of age, had been referred to the homeopathic practitioners and received treatment for at least three times were assessed in three main areas of satisfaction: physician performance, symptom relief and general health (via a valid questionnaire), these results were compared with a similar study done in 2004. After the assessment and comparison, it was found that four symptoms showed better improvement from 2004 to 2008: gastrointestinal disturbances, fatigue, insomnia and headache. The highest level of satisfaction that the patients noted was symptom relief, followed by physician performance and then general health. It was noted in this study that after using homeopathy for several years, patient satisfaction was high and they were happy to continue with the treatment that they had been prescribed.

Dr. Robert Medhurst BNat DHom DBM DRM DNutr, has been compiling positive research studies related to homeopathy for several years. He has compiled a multitude of positive homeopathic research studies that he has been with the community every month through ⁶³

His work to provide the world with huge volume of human trials, in-vitro and in-vivo research studies, animal trials and plant trials is truly a work of passion and he has been able to show the positive outcome of an enormous amount of homeopathic studies.

An example of Dr. Medhurst research found in *British Homoeopathic Journal*, 1969, 58.94. Nephrotic Syndrome, researcher, Pai PN, looked into yet another case series, where there were 23 children suffering from clinically diagnosed nephrotic syndrome were treated using individualized homeopathic medicines for periods varying from 1 month to 7 years. Subjects received short or long term treatment for the condition and in several acute episodes, corticosteroid therapy was used, in addition to the homeopathic management. For the majority of the children treated either with a combination of homeopathic and corticosteroid therapy or homeopathic therapy alone, the results showed that the severity of the symptoms they had previously experienced was reduced. The main homeopathic remedies used in the cases mentioned in this study included Apis mellifica, Arsenicum album, Natrum muriaticum and Silica.  

Another example found during his research, Frass M, Linkesch M, Banyai S et al. spent their time looking at adjunctive homeopathic treatment in patients with severe sepsis in an intensive unit. In this study, 70 people who had been admitted to an intensive care unit suffering from severe sepsis were treated either with individualized homeopathic treatment or a placebo. On reviewing the signs of sepsis, organ failures, need for mechanical ventilation and other

---

64 http://hpathy.com/scientific-research/database-of-positive-homeopathy-research-studies/
65 http://hpathy.com/scientific-research/research-homeopathy-part-13/
parameters at 180 days or 6 months after beginning treatment, 76% of the patients using homeopathy met survival criteria versus 50% of those on placebo.66

Studies into homeopathic remedies show that it is rational to support this treatment option as an effective practice in everyday life.

REFLEXOLOGY

The Reflexology Association of Canada defines reflexology as “a natural healing art based on the principle that there are reflexes in the feet, hands and ears and their referral areas within zone related areas, which correspond to every part, gland and organ of the body. Through application of pressure on these reflexes without the use of tools, creams or lotions, the feet being the primary area of application, reflexology relieves tension, improves circulation and helps promote the natural function of the related areas of the body.”67

Reflexology involves the physical act of applying pressure to feet, ears or hands with specific finger or thumb or hand techniques without the use of lotion. A system of zones and reflex areas that are said to be a reflection of an image of the body on the feet and hands which will affect a physical change to one’s body. There are variations on how reflexology is supposed to achieve its goal, but there is a unifying theme that by manipulating zones on the patient’s feet or hands, health can be improved by readjusting ones’ Qi.

---

66 http://hpathy.com/scientific-research/research-homeopathy-10/
An article in *Complementary Therapy Medicine*, compared the use of patient self-administrating of reflexology. The article shown that there was significant improvement in subjective outcomes: perceived stress, fatigue and depression. However, the article was unable to show that there were significant improvement in objective outcomes such as blood pressure, pulse rate or cortisol levels. More research is needed in the field of reflexology to show the benefits of this complementary therapy, and the research needs to ensure that information is gathered and done by professionals who have had training to maximize the benefits from this therapy not by self-administration done by patients.

MASSAGE THERAPY

Massage therapy is one of the oldest healthcare practices known. References to massage are found in ancient Chinese medical texts written more than 4,000 years ago. Massage therapy is the scientific manipulation of the soft tissues of the body, consisting primarily of hands-on techniques such as applying fixed or movable pressure, holding, and moving muscles and body tissues. Generally, massage is delivered to improve the flow of blood and lymph, to reduce muscular tension or flaccidity, to affect the nervous system through stimulation or sedation, and to enhance tissue healing.

Massage therapy has been used to help: reduce muscle tension and stiffness, relieving muscle spasm, increasing joint flexibility and range of motion, decreasing pain and inflammation due to sports injuries, relieving points of tension and overall stress, promoting deeper and easier breathing, improving blood circulation and movement of lymph and promoting a feeling of

---

well-being. Therapists use a variety of lotions and oils; aromatherapy can be integrated into massage therapy to help enhance the sense of relaxation and wellness.

At a medical school in the United States in 2014, a group of researchers looked into how neck arthritis pain may be reduced and range of motion is increased by massage therapy. Two groups were enlisted; a massage group and a waitlist group. The massage group was given a massage by a trained massage therapist weekly and instructed to give themselves a daily massage as well; the waitlist group received the same care but started one month after the initial massage group. A significant short-term reduction in pain and an increase in their range of motion were found in the massage group after the first and last day of the study. The waitlist group experienced the same results but in a less significant manner, leading the reader to believe that treatment received earlier the better the result will be.

BIOFEEDBACK

Biofeedback is a non-invasive technique where you learn to control your body’s functions, such as your heart rate. With biofeedback, you’re connected to electrical sensors that help you receive information about your body. This feedback helps you focus on making subtle changes in your body, such as relaxing certain muscles, to achieve the results you want, such as reducing pain or anxiety. Biofeedback is often used as a relaxation technique.⁶⁹

⁶⁹ http://www.mayoclinic.org/tests-procedures/biofeedback/basics/definition/prc-20020004
Biofeedback, sometimes called biofeedback training, is used to help manage many physical and mental health issues, including: anxiety, asthma, stress, chronic pain, constipation, chemotherapy side effects, elevated blood pressure, IBS or incontinence.

Research has shown that biofeedback interventions are efficacious in treating a variety of medical conditions. There in an increasing trend in Americans for using biofeedback in their routine healthcare. In 2001, a Task Force of the Association for Applied Psychophysiology and Biofeedback and the Society for Neuronal Regulation outlined criteria for levels of evidence-based clinical efficacy of psychophysiological interventions. The levels are described below:

- Level 1: not empirically supported - anecdotal reports and/or case studies which are not peer reviewed.
- Level 2: possibly efficacious - supported by at least one study of sufficient statistical power.
- Level 3: probably efficacious – supported by multiple observational, clinical, wait list controlled studies that demonstrate efficacy
- Level 4: efficacious – statistically significant superior to the control condition, appropriate data analysis, permits replication of the study by independent researchers and treatment has been shown in at least two independent research settings.
- Level 5: efficacious and specific – meets all of Level 4 criteria and the investigational treatment has been shown to be statistically superior to

http://www.ncbi.nlm.nih.gov/pmc/articles/PMC2939454/
credible sham therapy, pill or alternative bona fide treatment in at least tow
independent research settings.

By using the criteria above, researchers D. Montgomery and C.Yucha\textsuperscript{71}, rated the current
evidence on the efficacy of biofeedback and complied an extensive report in 2008. The below
information has been evaluated and proven in various studies, what must be kept in mind when
reading the information is that if a condition has a lower efficacy rating – this does not suggest
that biofeedback is not helpful in that particular medical condition but rather that the relevant
research has not yet been conducted\textsuperscript{52}. A few examples from the study are as follows, level 1:
eating disorders and immune function, level 2: asthma, autism, depressive disorder, cerebral
palsy and stroke, level 3: alcohol/substance abuse, arthritis, traumatic brain injury, vulvar
vestibulitis and insomnia, level 4: anxiety, ADHD, constipation, hypertension and chronic pain,
level 5: urinary incontinence in females. Researchers at the Cleveland Clinic are continuing the
study of biofeedback.\textsuperscript{52}

ENERGY MEDICINE/ELECTROMAGNETIC THERAPY

Energy healing promotes healing by enhancing energy flow and correcting disturbances in the
“human energy field” or “aura” which permeates and surrounds the body. Improving the flow
of energy in the energy field supports the self-healing capacity of the body.\textsuperscript{72}

\textsuperscript{71} Yucha, C., Montgomery. D., Evidence-Based Practice in Biofeedback and Neurofeedback. Wheat Ridge:
Association for Applied Psychophysiology and Biofeedback, 2008.
\textsuperscript{72} http://heartofhealing.net/energy-healing/introduction-to-energy-healing/
The principle idea behind energy healing is: everything is energy, all healing ultimately involves energy. Most healing methods are focused on the physical, mental and emotional levels of life, without recognition of the deeper underlying energy. Energy healing works purely with the energetic level of our being. Since everything is made up of patterns of energy, working directly with energy influences the physical, mental and emotional, as well as the spiritual level\textsuperscript{30}. Practitioners can integrate herbs and crystals into their practice but it is not a necessity as the practitioner is using the patient’s own energy to unblock and improve both physical and emotional health.

Using not the patients’ own energy to improve physical and emotional well being but using a form of electromagnetic therapy is another area of interest when discussing energy healing. Pulsed electromagnetic field therapy (PEMFT), also called pulsed magnetic therapy, pulse magnetotherapy, or PEMF, is a reparative technique most commonly used in the field of orthopedics for the treatment of non-union fractures, failed fusions, congenital pseudarthrosis and potentially even depression.\textsuperscript{73}

In 2009, Obermeier A, Matl Dominik F, Friess W and Stemberger A, published a study in Bioelectromagnetics in May 2009 discussing the use of low frequency electric and electromagnetic fields on the growth inhibition of Staphylococcus aureus\textsuperscript{74}. There has been a movement to show that magnetic field therapy is an established technique in the treatment of pseudarthrosis. In cases of osteomyelitis, palliation is also observed. The study performed by Obermeier et al, focuses on the impact of different electric and electromagnetic fields on the

\textsuperscript{73} \url{http://en.wikipedia.org/wiki/Pulsed_electromagnetic_field_therapy}
\textsuperscript{74} \url{http://onlinelibrary.wiley.com/doi/10.1002/bem.v30:4/issuetoc}
growth of the bacteria *Staphylococcus aureus* by in vitro technologies. The cultures of *Staphylococcus aureus* which were housed in both fluid and gel-like mediums were then exposed to a low-frequency electromagnetic field, an electromagnetic field combined with an additional electric field, a sinusoidal electric field and a static electric field. In the gel-like medium it was shown that there was no significant difference between colony-forming units of exposed samples and non-exposed references was detected. However, in the sample of *Staphylococcus aureus* concentrations in the fluid medium it was clearly shown to have a reduced number of colony-forming units under the influence of the four different applied fields within twenty-four hours of beginning the experiment. The strongest effects were observed for the direct current electric field which could decrease CFU/ml of 37%, and the low-frequency electromagnetic field with additional induced electric alternating field with a decrease of *Staphylococci* concentration by 36%. This study helps to show that the application of low-frequency electromagnetic fields corroborates clinical situations of bone infections during magnetic field therapy.\(^7\)

Diabetic foot ulcers are painful wounds to deal with and the researchers, Kwan RL, Wong WC et al have begun a pilot project to evaluate the use of pulsed electromagnetic field therapy for that particular ailment\(^7\). To examine the effects of pulsed electromagnetic field (PEMF) therapy on promoting the healing and microcirculation of chronic diabetic foot ulcers. The study began with a randomized, double blind, placebo controlled group of chronic foot ulcer in a hospital setting. Thirteen patients who had a history of unsatisfactory healing on ulcer(s) in the previous four weeks were recruited and treated with either active PEMF therapy of non-
active PEMF therapy. At the end of the treatment period and again one month post-therapy, an assessment on wound closure, depth and microcirculation were measured against baseline data. Results were significant: there was an 18% decrease in wound size, increase of 28% in cutaneous capillary blood velocity and a 14% increase in the capillary diameter in the active PEMF group, leading to the conclusion that PEMF therapy helps to accelerate wound healing and improve microcirculation in diabetic foot ulcer patients.

HYPNOSIS

Hypnotherapy-like practices were used in ancient Egypt, Greece, Persia, Babylon, Britain, America, Africa, India, Scandinavia and China. Talmud, Hindu Vedas and the Bible mention hypnotherapy and there are some African and Native American ceremonies that include trance states similar to hypnotherapy.²²

Hypnosis typically involves an introduction to the procedure during which the subject is told that suggestions for imaginative experiences will be presented. The hypnotic induction is an extended initial suggestion for using one's imagination, and may contain further elaborations of the introduction. A hypnotic procedure is used to encourage and evaluate responses to suggestions. When using hypnosis, the patient is guided by the hypnotist to respond to suggestions for changes in subjective experience, alterations in perception, sensation, emotion, thought or behavior."
Patient can also learn self-hypnosis, which is the act of administering hypnotic procedures on one’s own. If the subject responds to hypnotic suggestions, it is generally inferred that hypnosis has been induced; this is the beginning of treatment. The patient will then be “told” what is the appropriate response to the “problem”, for example: smoking – the patient wants to stop but cannot, the hypnotist can instill the idea in the subconscious not to smoke even if the patient wants to, they realize that it is wrong and will not have that cigarette.

Functional heartburn is a benign but burdensome condition characterized by painful, burning epigastric sensations in the absence of acid reflux or symptom-reflux correlation, the problem of esophageal hypersensitivity and its psychological counterpart, esophageal hypervigilance is what drives the troublesome symptom experience. An established and preferred intervention for refractory symptoms is hypnotherapy for gastrointestinal disorders, the study by Riehl ME et al, Feasibility and acceptance of esophageal directed hypnotherapy for functional heartburn wanted to try to establish hypnotherapy as an alternative for patients that are not receiving relief with medications or who want to use a lifestyle intervention that could be applied to FH. The objective was to determine the feasibility, acceptability, and clinical utility of 7 weekly sessions of esophageal-directed hypnotherapy on heartburn symptoms, quality of life, and esophageal hypervigilance. Regardless of hypnotisability of the patients, there were consistent and significant changes in quality of life, heartburn symptoms and visceral anxiety. The researchers concluded that hypnotherapy would be wise choice for those who suffer from functional heartburn.  

NATUROPATHY

Naturopathy—also called naturopathic medicine—is a medical system that has evolved from a combination of traditional practices and health care approaches popular in Europe during the 19th century. Practitioners view their role as supporting the body’s inherent ability to maintain and restore health, and prefer to use treatment approaches they consider to be the most natural and least invasive.\(^7\) Naturopaths use a multitude of therapies including: herbal medicines, nutritional counselling, hydrotherapy, homeopathy, and physical exercise and lifestyle modifications. These practitioners have mandatory education, which includes a minimum of 4 years of university and a set number of on-the-job practical training under the supervision of a registered Naturopathic Doctor.

These students then must pass a variety of standard exams (Naturopathic Physicians Licensing Examinations (NPLEX), this consists of two parts: Part I - Biomedical Science Examination, the clinical summary is very brief and Part II – Clinical Science Examinations, the clinical summary is more extensive) to practice and call themselves Naturopathic Doctors. In North America and Europe they must also prove continuing education every year to ensure that they are continuing their education to provide the best possible care to their patients.

The practice of naturopathy is based on principles that are similar to and consistent with the principles of primary care medicine as practiced by conventional physicians, therefore this CAM is deemed most acceptable in Europe and in certain provinces and states in North America.

These include:

---

\(^7\) [http://nccam.nih.gov/health/naturopathy](http://nccam.nih.gov/health/naturopathy)
- Do no harm: try to minimize harmful side effects and avoid suppression of symptoms.

- Physician as teacher: educate patients and encourage them to take responsibility for their own health.

- Treat the whole patient: consider physical, mental, emotional, spiritual, genetic, environmental, social factors when tailoring treatment to each patient.

- Prevention: assess risk factors and, in partnership with patients, make appropriate interventions to prevent illness.

- Healing power of nature: seek to identify and remove obstacles to the body’s natural processes for maintaining and restoring health.

- Treat the cause: focus on the causes of a disease or condition, rather than its symptoms.\textsuperscript{33}

Naturopathy has become an ever increasing choice for patients that aren’t happy with the current therapy that they are receiving from their physician. These patients are willing to learn and accept how to help themselves by using a more natural approach to life and use their own bodies as a template or guide to their improved well-being.

Cardiovascular disease may be preventable through dietary and lifestyle interventions, however few individuals at risk receive intensive dietary and lifestyle counselling. Seely D, Szczurko O et al\textsuperscript{79}, conducted a randomized controlled trial to evaluate the effectiveness of naturopathic care in reducing the risk of cardiovascular disease using postal workers from a few major centres across Canada – Toronto, Edmonton, Calgary and Vancouver. The primary outcome was to

\textsuperscript{79} http://www.ncbi.nlm.nih.gov/pubmed/23630244
determine the 10 year risk of having a cardiovascular event, this was based on the Framingham risk algorithm, as well as the odds of metabolic syndrome.

Participants in both groups received care by their family physicians. Those in the naturopathic group also received individualized care: health promotion counselling, nutritional medicine or dietary supplementation at seven preset times in work-site clinics by licensed naturopathic doctors. The patients’ body weight, waist circumference, lipid profile, fasting glucose levels and blood pressure of participants in both groups were measured three times during a 1-year period. The results were significant and show exactly how naturopathic involvement can help to reduce risks of cardiovascular events in patients. At the end of the trial period, those individuals in the naturopathic group had a reduced adjusted 10-year risk (10.81% vs. 7.74%) and a lowered adjusted frequency of metabolic syndrome (48.48% vs. 31.58%). Therefore patients would have a better overall reduction in the risk of a cardiovascular event with the addition of a naturopathic doctor as a part of their health care team.

OSTEOPATHY/CHIROPRACTIC MEDICINE Practitioners of osteopathy claim that the well-being of their patients depends upon their bones, muscles, ligaments and connective tissue functioning well together. This is done by moving, stretching and massaging a patient’s muscles and joints. Osteopaths focus on how joints, muscles, the skeleton, circulation, nerves, internal organs and connective tissues function as a holistic unit.

Osteopathic manipulative therapy (OMT – U.S. terminology or osteopathic treatment elsewhere) is defined as the therapeutic application of manually guided forces by a practitioner, intended to improve physiologic function and/or support homeostasis that has been altered by
somatic dysfunction. Somatic dysfunction is an impaired or altered function of related components of the body framework (somatic system); arthrodial and myofascial structures, skeletal and their related vascular, lymphatic and neural elements.

OMT methods are broadly categorized as direct or indirect and active or passive in nature. And can be seen as follows:

- Active method: a technique in which the person voluntarily performs an osteopathic practitioner-directed motion.
- Passive method: based on techniques in which the patient refrains from voluntary muscle contraction.
- Direct method (D/DIR): an osteopathic treatment strategy by which the restrictive barrier is engaged and a final activating force is applied to correct somatic dysfunction.
- Indirect method (I/IND): a manipulative technique where the restrictive barrier is disengaged and the dysfunctional body part is moved away from the restrictive barrier until tissue tension is equal in one or all planes and directions.

OMT has been a topic of research in Italy by Cerritelli, Ginevri et al, they conducted a study to assess the effectiveness of OMT on patients with chronic migraines using a HIT-6 questionnaire, drug consumption, pain intensity, days of migraine and functional disability. The

---

patients in this study were randomized into three groups (OMT + medication therapy, sham +, medication therapy and medication only), and received eight treatments during a six month period. The results for OMT were significant, HIT-6 scores were reduced by 8.74, and drug consumption and pain intensity were decreased as well as functional disability, suggesting that osteopathic manipulation is potentially a huge adjunctive therapy for patients suffering from migraines.

A chiropractor is a person who practices chiropractic, specialising in the diagnosis, treatment and prevention of disorders of the neuromusculoskeletal system and the effects of these disorders on general health, emphasizing manipulative and manual for the treatment of joint dysfunctions.  

Chiropractors receive degrees via three major full-time educational paths culminating in either a Doctor of Chiropractic (D.C.), DCM, BSc, or MSc degree.

The World Health Organization lists three potential educational paths involving full-time chiropractic education around the globe: 4 years of science at the university level followed by 4 years of a doctorate program, a 5 year integrated bachelor degree and a master’s degree following the bachelor’s degree. After meeting all clinical and didactic requirements a degree in chiropractic is granted, then the practitioner must be licensed from their countries licensing body, protecting patients by ensuring consistent standards of practice.

Chiropractors can help not only in medical treatments but in other areas as well. A pilot study was done by Deutschmann for soccer players. The most common soccer kicking method

---

82 http://en.wikipedia.org/wiki/Chiropractor
comprising mostly of the instep kicking technique, a decreased in the motion in spinal joint
segments results in adverse biomechanical changes within in the kinematic chain. What this can
ultimately led to is a change to a negative impact on soccer performance. Deutschmann tested
the immediate effect of lumbar spine and sacroiliac manipulation alone and in combination on
the kicking speed of uninjured soccer players, in a single blinded study in 2010. Four groups
were created: lumbar spine, sacroiliac joint, lumbar spine and sacroiliac joint and not present,
the players underwent a standardized warm-up, manipulative intervention followed and
outcomes were measured before and after. Outcomes that were measured: kicking speed,
range of motion changes and the players' perception of a change in their kicking speed. Results
were as follows: lumbar spine manipulation resulted in significant range of motion increases in
left and right rotation; sacroiliac manipulation resulted in no significant changes in the lumbar
range of motion and lastly the combination manipulative interventions resulted in significant
range of motion increases in right SI joint flexion, lumbar extension and right rotation. It was
also noted that there was a significant increase in kicking speed post intervention for all three
manipulative intervention groups. There needs to be further studies to help validate the results
but it was noted that several players were going to continue with the therapy outside of the
study.

MEDITATION/RELAXATION

The term "meditation" can refer to the state itself, as well as to practices or techniques
employed to cultivate the state. Meditation may also involve repeating a mantra and closing

http://en.wikipedia.org/wiki/Meditation
the eyes. The mantra is chosen based on its suitability to the individual who is doing involved in
the mediation state. Meditation has a calming effect and directs awareness inward until pure
awareness is achieved. This may be done as an individual activity or as a group, the individual
focuses solely on a single image, sentiment, word or idea until they have reached an inner
peace.

Relaxation therapy can not only include a form of mediation but also breathing techniques.
There are a variety of breathing techniques that can be used; deep breathing – in thru ones’
nose and out thru the mouth, a series of short inhales and exhales thru the mouth or nose or
the Lamaze® technique – breathing through childbirth using a “huffing he” to help the mother
concentrate on her breathing rather than the pain associated with childbirth.

Researchers Jan van Dixhoorn and Adrian White, conducted a meta-analysis to help establish
the effects of relaxation therapy on the recovery from a cardiac ischemic event and secondary
prevention. A large scale search was conducted by the two researchers looking for controlled
trials that included patients who had suffered from a cardiac event who were taught relaxation
therapy with outcomes measured with respect to psychological, physiological, cardiac events,
cardiac effects and the return to work. After examining twenty-seven studies, the results came
back as this: intensive supervised relaxation practice showed to enhance recovery from a
cardiac event and also contributed to secondary prevention of a cardiac event. The analysis
shows that relaxation therapy is an important part of rehabilitation in patients who have
suffered an ischemic cardiac event. SPIRITUAL OR RELIGIOUS

85 http://cpr.sagepub.com/content/12/3/193.short
Spiritual healing is the channelling of healing energies through a healer to a patient. It re-energizes and relaxes the patient to enable their own natural resources to deal with illness or injury (both mentally and physically) in the best possible way. By directing energy, usually through the hands, the healer seeks to supplement the depleted energy of the recipient, releasing the body's own healing abilities to deal with the problem in the most effective way for that individual. The healer asks for healing to be channeled from Spirit, God, and the highest level of light. Unlike faith healing, it is not required that the patient have faith in the healer or in the healing process in order for healing to take place.  

Religious healing may also fall under the same category as spiritual, the main difference is that the patients who look to religious healing have a deep sense of religion. These patients tend to have a religious upbringing, attend an organized religious ceremony and have a large support group that believes in the potential healing of “God” or “Gods”. Prayer is the mainstay of religious healing; patients, their families or friends ask “God” to provide an answer to their medical concerns.

Anxiety and spiritual distress are common problems among the elderly patients admitted in intensive care units; this specific patient group are more vulnerable to spiritual distress and/or anxiety issues due to impairment of their adaptation mechanisms. Elham, Hazrati et al, conducted a quasi-experimental study aimed at investigating the effect of need-based spiritual/religious interventions on spiritual well-being (SWB) and anxiety of the elderly admitted to coronary care unit (CCU), which included 66 patients admitted to Imam Reza

http://ezinearticles.com/?Spiritual-Healing&id=471364
hospital in Lar, located in southern Iran in 2014, data was collected using the Spielberger State-Trait Anxiety Inventory, the SWB Scale, and a demographic questionnaire. These questionnaires were completed through the interviewing of the patients before and after spiritual and religious need-based interventions. The intervention group underwent a sixty to ninety minute sessions of spiritual and religious need-based interventions for three consecutive days. The results achieved by Elham et al, showed that there was a significant increased in the scores of SWB and a decrease in the anxiety of the patients after the intervention. Also noteworthy, there was a significant correlation was observed between the mean scores of SWB and state and trait anxiety. This can help led to the conclusion that spiritual/religious interventions could enhance SWB and reduce anxiety in the elderly admitted to hospitals across the globe.

YOGA

Yoga is an ancient system of relaxation, exercise and healing with origins from Indian philosophy. Physical, intellectual, emotional, mental, spiritual dimensions are addressed to bring forward an overall harmonious state of well-being. The philosophy of yoga can be pictured as a tree with eight branches\textsuperscript{22}:

- Pranayama: breathing exercises
- Asana: physical postures
- Yama: moral behaviour
- Niyama: healthy habit
- Dharana: concentration
- Pratyahara: sense withdrawal
- Dhyana: contemplation
- Samadhi: higher consciousness

Patients that suffer from migraines can use yoga therapy which can be effectively incorporated as an adjuvant therapy in migraine, as per a study done by Kisan R, Sugan M et al\textsuperscript{88}, in the effects of yoga on migraine relief. The aim of this particular study was to evaluate the efficacy of yoga as an adjuvant therapy in migraine patients by assessing clinical outcome and autonomic functions tests. The patients were either given conventional care or yoga combined with conventional care, the group using yoga received yoga sessions five day per week for six weeks – along with conventional care. An assessment of the frequency, intensity of headache and headache impact and autonomic function test were done at the beginning of the study and at the end of the intervention.

The group that received yoga showed a higher improvement in clinical variables, improvement in the vagal tone and reduced sympathetic activity, showing that practicing yoga is an important adjunct to patient who experience migraine episodes.

ANTHROPOSOPHIC  Anthroposophic medicine (or anthroposophical medicine) is a form of alternative medicine that in part complements and in part replaces mainstream medicine. Founded in the 1920s by Rudolf Steiner in conjunction with Ita Wegman, anthroposophical medicine draws on Steiner's spiritual philosophy, which he called anthroposophy.\textsuperscript{89}

\textsuperscript{88} http://www.ncbi.nlm.nih.gov/pubmed/?term=Effect+of+Yoga+on+migraine%3A+A+comprehensive+study+using+clinical+profile+and+cardiac+autonomic+functions.
\textsuperscript{89} http://en.wikipedia.org/wiki/Anthroposophic_medicine
Practitioners employ a variety of treatment techniques including massage, exercise, counseling, and the use of anthroposophic drugs, which are ultra-diluted substances – similar to those used in homeopathy.

As well as drug remedies, anthroposophical medicine also includes the following practices: art therapy (a therapy which includes painting, drawing, music, speech exercises and clay modeling), external applications, rhythmic massages, eurythmy (re-integration of body, spirit and soul), nursing and counselling.

Hamre, Becker-Witt et al published their results from The Anthroposophic Medicine Outcomes Study (AMOS) in 2004\textsuperscript{90}. This study was to look into the clinical outcomes and costs in patients treated with AM therapies for chronic conditions, such as: anxiety, asthma, attention-deficit disorder with hyperactivity, depressive disorder, neck and lower back pain, migraines and sinusitis. The therapies that were used and observed during the study were: art, eurythmy and rhythmical massage. The study found that anthroposophic therapies were associated with a long-term reduction of certain disease symptoms, a decrease in health care cost and an improvement of health-related quality of life factors.

There was a follow up study done four years\textsuperscript{91} later that confirmed the results from the original study: patients were maintaining an improved health-related quality of life and a significant decrease in the reduction of their chronic disease symptoms.

COLOR THERAPY

\textsuperscript{90} http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.219.313&rep=rep1&type=pdf
\textsuperscript{91} http://www.anthromed.org/UploadedDocuments/Hamre_AMOS_4_Year_Follow-up_BMC_Res_Notes_2013.pdf
Colour therapy is an ancient art with many sophisticated systems existed in Europe, the Middle East and Asia. Today it is one of the fastest growing areas of natural health with an explosion of scientific development in the use of light to heal. This therapy is now use extensively in Asia, Europe and America as a complementary treatment of many physical ailments including: asthma, arthritis, nervous and mental disorders, depression, eating disorders, skin diseases, digestive ailments, blood and circulation problems, fevers, rheumatism, shock, relief of pain as part of the treatment for many serious illnesses such as paralysis, multiple sclerosis, cancer and AIDS.  

A colour therapist helps people understand their needs for certain colours, and show them how to use these colours in their daily lives for healing, health, relaxation inspiration and protection. They will also able to use colour to balance energy, aid creativity and learning, release blocks and alleviate physical, emotional and mental conditions. A colour therapist will also make recommendations about the therapeutic use of colour in your dress, home and work environment and in your diet.  

Twenty eight stroke patients, with either a good functional recovery or a moderate disability, and their caregivers, were divided by Kyoung Kim into colour therapy and control groups during the study; Effects of Art Therapy Using Colour on Purpose in Life with Patients with Stroke and their Caregivers. As patients who suffer from a stroke will likely be left with some form of physical disability which is then followed by mental instability, the mental instability also affects their primary caregivers. The therapy sessions were conducted for two hours per

92 http://www.bhia.org/holistic/colour-therapy.htm
93 http://www.ncbi.nlm.nih.gov/pmc/articles/PMC3521264/
week, 16 sessions in total to evaluate the degree and the change of the level of purpose in life for both the stroke victim and their caregiver. Results published showed a significant improvement in purpose of life of both stroke patients and their caregivers, leading to the recommendation that colour therapy is an important adjunct therapy for both patients and their families.

LIGHT THERAPY

Light therapy or phototherapy or heliotherapy, consists of exposure to daylight or specific wavelengths of light using the following: polychromatic polarised light, light-emitting diodes, fluorescent lamps, lasers, very bright full-spectrum light. The light is administered to the patient for a specific prescribed amount of time and even potentially at a specific time of day. Common uses of light therapy are in the treatment of skin disorder, namely: psoriasis, eczema, acne and neonatal jaundice.

Light therapy that strikes the retina is often used to treat circadian rhythm disorders such as delayed sleep phase disorder or seasonal affective disorder (SAD). There have also been some studies researching the benefits of light therapy for non-seasonal psychiatric disorders.94

PM Fisher, MK Madsen et al95, conducted an experiment regarding light therapy. Bright-light intervention is reported to successfully treat depression, in particular seasonal affective disorder. An amygdala-prefrontal cortex corticolimbic circuit regulates responses to environmental stimuli and may underlie these effects. Serotonin signaling modulates this circuit

94 http://en.wikipedia.org/wiki/Light_therapy
95 http://www.ncbi.nlm.nih.gov/pubmed/24439303
and is implicated in the pathophysiology of seasonal and other affective disorders. The study involved reviewing the effects of a bright-light intervention on threat related to corticolimbic reactivity and functional coupling which was assessed with an emotional faces magnetic resonance imaging paradigm. The patients were given bright light intervention for 30 minutes per day over a 3 week period. The results from this study of Fisher’s showed that the bright light therapy significantly negatively affected threat related amygdala and the prefrontal reactivity in a dose dependent a manner. The patients were dosed at 0.1-11.0 kilolux during this time period. Also note worthy is the reult that the amygdala-prefrontal and intraprefrontal functional coupling increased significantly in a dose-dependent manner. Conclusions to these novel findings support that the threat-related corticolimbic circuit is sensitive to light intervention and may mediate the therapeutic effects of bright-light intervention when given in dose-dependent therapy.

Complementary alternative medicine is ever changing, with more and more alternative therapies being added every year. As the definition is basically this: CAM is therapy that is an adjunct to traditional Western medicine. There is a never ending potential to increase therapies to help patients.
There have been multiple studies across European countries that suggest the ever increasing use of complementary alternative medicine over the last two decades, with a staggering number of up to 70% \(^{96}\) of European citizens stating that they have used some form of CAM therapy in the past or are using it today.

Data obtained from the Health Survey for England 2005\(^ {97}\), showed that the lifetime and 12-month prevalence of complementary medicine use were 44.0% and 26.3% respectively. The study showed 12.1% of the patients had consulted a practitioner in the preceding 12 months and the most commonly used therapies were aromatherapy, acupuncture and massage. The information gathered also showed that there were twenty-nine percent of the patients who responded to the questionnaire were taking prescription drugs had used CAM in the last 12 months. Certain groups of individuals were noted as were significantly more likely to use some form of an alternative medicine: women, those suffering from anxiety or depression, university educated respondents, individuals with lower levels of perceived social support, people consuming greater that 5 portions of vegetables and fruit per day and people with poorer mental health.\(^ {69}\)

\(^{96}\) Nissen, N. What attitudes and needs to citizens in Europe having in relation to complementary and alternative medicine? November 2012.

\(^{97}\) http://www.ncbi.nlm.nih.gov/pubmed/20698902
Analysing surveys done over the past ten years, there is a general conclusion that can be made: 20% of EU citizens have a clear preference for CAM therapy, another 20% are regular users and another 20% are occasional users of some form of complementary alternative medicine. What does that mean? Based on that information, there are more than 100 million citizens in the EU that use some form of complementary alternative medicine. That figure leads to the potential conclusion that from the perspectives of citizens of Europe CAM is a condition *sine qua non* (indispensable and essential action, condition, or ingredient)\(^98\) for modern healthcare in the EU.\(^6\)

What is the reason behind this? Is it due to the larger population, the more extensive training that all health care practitioners experience during their schooling, does it have anything to do with the history of Europe – scientific discoveries were plentiful during earlier times or are Europeans’ more open minded and willing to try something new, even if they don’t fully understand why the treatment works?

The European Federation for Complementary and Alternative Medicine (EFCAM) has adapted a theory or idea from the European Social Charter that states: “Everyone has the right to benefit from any measures enabling them to enjoy the highest possible standard of health attainable”\(^99\). This shows that not only does each citizen feel that they should have access to the best possible medical care, be it conventional medicine or an alternative therapy, but that the government also agrees to that standard. The particular strength of CAM is the combination of individualized holistic care, capacity to provide health maintenance, illness


\(^99\) [http://www.EFCAM.com](http://www.EFCAM.com)
prevention and non-invasive illness therapy plans as part of a health care package – this is an attractive plan, which leads to a high satisfaction rate with patients who work with traditional physicians as well as holistic practitioners. Currently in Europe, complementary alternative medicine is mostly provided privately (paid through insurance or out-of-pocket from patient), but in a variety of countries there is a growing numbers of cases that due to a number of challenges faced in the healthcare fields, chronic illness, aging population, rising healthcare costs, maintaining a healthy workforce – it is becoming not an alternative to conventional medicine but a first line treatment to help maintain the health of the individual and the government has seen the value and is willing to help offset the cost of the therapy.

In the UK there has been a serious discussion that has taken place as to whether the National Health Service (NHS) should help cover the costs associated with alternative medicine therapies or put the focus more on urgent health care issues in the public sector.\(^{100}\) In the UK, the estimated budget of £2,700,000,000 a year for CAM therapies to be paid by the NHS were debated; a group of the individuals against the NHS providing funding for alternative therapies listed the following as to reasons why the NHS should not provide the funding: lack of standardization, lack of rational data for the public, lack of safety standards, lack of education (especially for physicians and nurses), lack of a single definition for complementary alternative medicine, cost ineffective, building up dependencies and psychological addictions among patients, lack of well researched studies and time consuming. All points are valid arguments, up to a certain point. There does need to be more research done to establish that alternative therapies are beneficial, that information needs to be communicated to patients and health

\(^{100}\) http://users.ox.ac.uk/~gree0725/Literature/Oxford1stTERM/Debates/NHS/Debate%20Reportfinal.doc
care professionals, there needs to be work done by the alternative medicine community to come up with a sustainable definition of CAM, training and education needs to be standardized and not necessarily practiced by GPs and nurses but specifically trained practitioners who can spend the appropriate time with each patient. Holistic practitioners focus on the patient as a whole, not just an individual problem and are encouraging patients to more pro-active in listening to their bodies not being re-active after something traumatic has occurred, prevention should be the cornerstone of health care across the world. If the NHS assisted patients in the costs associated for alternative therapies then there may not be the need for as much funding for urgent care in the public sector.

It has been observed that access to complementary alternative medicine care varies drastically from country to country and especially between socio-economic groups. The lower the income, the less money is available for any extras; unfortunately that includes any form of CAM therapy that isn’t included in their current health coverage. This decreases the number of individuals who could benefit from an alternative therapy and have a more holistic, healthy lifestyle due to the fact that those individuals just don’t have the financial resources to start or maintain that more positive lifestyle that individuals with health insurance or who are financially well-off can afford.

There are approximately 300,000 holistic practitioners across Europe\textsuperscript{40}. One concern for the patients is that the approach to complementary alternative therapies are not uniformly recognised throughout Europe and the right to practice varies from country to country – which
coincidentally is an issue faced not only in Europe but in North America, Australia, China and South America.

During the research of the attitudes of patients and health care professionals in Europe, CAMbrella: the roadmap for European CAM research\textsuperscript{101} proved to be an invaluable resource to get the most up-to-date information, the best peer-reviewed and most comprehensive website to help me guide through European attitudes concerning CAM.

CAMbrella defines CAM as: “Complementary alternative medicine is an umbrella term for treatment practices mainly used outside conventional medicine. The most prominent CAM disciplines in the EU are herbal medicine, acupuncture, homeopathy and manual therapies (including massage therapy, osteopathy and reflexology) but CAM also includes such practices as anthroposophic medicine and naturopathy. Complementary alternative medicine is practiced mostly in private practice by medical doctors and practitioners trained the specific discipline.”

What do citizens in the EU want? The following key findings are:

- A transparent regulation of CAM practice and training. Confidence in complementary alternative medicine practitioners in enhanced when CAM is provided with an existing framework (hospital/doctor’s office) or when practitioners are members of a professional organization that ensures educational as well as ethical standards.

\textsuperscript{101} www.cambrella.eu
- Fewer barriers for the access for all forms of complementary alternative medicine. Due to the fact that most CAM treatments are paid for privately, the barriers to the lower socio-economic groups can be devastating and not attainable.

- Easily accessible and trustworthy information, the more trustworthy the information the more citizens will feel comfortable making the decision to visit a CAM practitioner.

- More support and information regarding complementary alternative therapies from the medical professionals. CAM usage is not always disclosed to physicians by their patients because of the assumed or known hostile attitude of health care professionals towards complementary alternative therapies.

- Increased and diverse access to CAM therapies. EU citizens would like to have CAM available as part of their normal healthcare, not something “extra”, and provided not only but physicians but by complementary alternative or holistic practitioners that have had therapy specific training and certification.

In the EU the most common CAM disciplines are as follows: acupuncture, anthroposophic medicine, herbal medicine, homeopathy, manual therapies (chiropractor, massage therapy, osteopathy and reflexology), TCM and natural medicine (aromatherapy, diet, exercise and food supplements), as reported by multiple studies done throughout the EU. There were specific countries with a higher prevalence to certain CAM therapies: Austria (energetic medicine),
Denmark (visualization), Germany (breath therapy and hydrotherapy), Sweden (naprapathy), Hungary (dance therapy), and France (mesotherapy). \[^{42}\]

CAMbrella provided a small section of peer reviewed publications that dealt with the providers’ prospective and how patients were able to access that information. The information was somewhat incomplete due to a variety of factors; physicians have a registration body that will allow data sampling in a fairly reliable search using the internet, however some physicians did not indicate what their opinion was regarding the use of alternative therapies. Non-medical practitioners are not as organized and less reliable information is available from searching the internet as to what qualifications they had obtained. With regards to physicians, four of the most provided CAM therapies used in the EU were identified as the most common: acupuncture, manual therapy homeopathy and herbal medicine.

In the EU, CAM therapies are maintained by approximately 150,000 registered physicians with additional CAM certification and at least 180,000 registered and certified non-medical practitioners. \[^{42}\]

Due to the fact that there are a large number of registered physicians in the EU, one enormous benefit is this: the potential decrease in antimicrobial resistance (AMR) – the resistance of parasites, fungi, bacteria, and virus to antimicrobial drugs previously effective for the treatment of that particular infection. \[^{102}\]

Dr. Keiji Fukuda (WHO’s Assistant Director-General for Health Security) recently stated that AMR is occurring in each and every region across the globe, leading to the potential risk of affecting anyone, of any age, in any country. \[^{74}\]

\[^{102}\] http://www.anme-ngo.eu/images/eu-agenda/EUROCAM_CAM_AMR.pdf
Researchers have been able to demonstrate that by combining antibiotics with plant medicines, this can enhance the actions of the antibiotics thereby overcoming antibiotic resistance for certain infections. This has been shown to be achieved by three ways:

1. Combined phytochemical and antibiotic attack on the bacterial cell wall.
2. Inhibition of enzymes that are generated by bacteria for the deactivation of antibiotics.
3. Disabling an efflux pumping system developed by the bacteria to prevent potentially destructive compounds (antibiotics) from penetrating into the bacteria.

An examples of disabling an efflux pump: *E.coli*, which is currently demonstrating resistance to several antibiotics but when combined with extracts of *Sophora alopecuroides* isolates of the bacteria were found to be susceptible to the antibiotic ciprofloxacin; using *Scutellania baicalensis* against the methicillin-resistant *Staphylococcus aureus* to restore the antimicrobial actions of ciprofloxacin.\(^74\)

The use of phytotherapy or herbs to enhance the use of current medications is still in its infancy but with further research and because of this research that is being done in this particular sector of health care, practitioners across the board will be using more alternative therapies to ensure the safety and efficacy of the current health care system.

In a study conducted by Wharton and Lewithin in 1986, they were able to determine that in the UK about 1/3 of general practitioners (GPs) had received some training in complementary alternative therapies and approximately 10% had completed some form of specialist training in CAM. An interesting point that they also discovered was the almost 15% of these GPs wanted
to obtain CAM skills. This study, despite that it was conducted twenty-eight years ago; found that even then GPs in the UK found that CAM therapies were assessed as being useful to their patients (59%). Also that 76% of GPs had referred patients for CAM treatment to medically qualified practitioners and 72% had referred their patients on non-medically qualified practitioners.¹⁰³

There has been a recent movement in the current curriculum in European medical schools (Medical Doctors) to include a large portion of their course load dedicated to complementary alternative medicine. As for other health care professionals curriculum in Europe (nursing, dentistry, pharmacy and veterinary), they too appear to have a large portion of their curriculum based or at least touched upon by CAM therapies that are available. By having a basic understanding of therapies that are available outside of the normal traditional medicine therapies, this allows for the open conversation between patients and their healthcare providers to explore a different path for their overall health care plan.

CAMbrella has published as article stating that in 2005, France was the frontrunner with homeopathic education or teaching at eight universities, Poland with seven, Germany with five and Spain with four universities. Hungary and Norway each have one university that includes homeopathic education.⁴⁴ In Germany, homeopathy has become part of medical students’ curriculum and natural healing techniques have been added in connection with physical medicine and rehabilitation. Greece has developed a 2 year Master in Science course in homeopathy for physicians and dentists, which is offered by the state-supported University of

¹⁰³ https://fedora.phaidra.univie.ac.at/fedora/get/o:300096/bdef:Content/get
the Aegean, approved by the government in 2006 and supported by the Hellenic Homeopathic Society (HHMS) and the International Academy of Classical Homeopathy.

In Europe, all healthcare professionals have received some form of education on complementary alternative medicine therapies. This extra education will lead to an increase in acceptance, from both patients and other health care professionals, and an increased rate of referral for patients to certified CAM practitioners.
In North America there is a portion of the population; more than 70% of Canadians, or almost 24 million people, who regularly use some form of complementary alternative medicine such as herbal products, homeopathic remedies and other forms of treatments to stay healthy and improve their quality of life\textsuperscript{104}, this leads to the question: do the remainder rely solely on Western Traditional Medicine or conventional medicine?

Western Traditional Medicine educational facilities do not include a large teaching block for alternative therapies in their curriculums. They focus mainly on traditional medications, therapies and all information is evidence based. It stands to reason that if health care practitioners in North America have not been trained or exposed to alternative therapies, that they would have their suspicions or be cautious in their recommendation of CAM therapies. On average, in Canada, medical doctors receive approximately 5 hours of holistic training, nurses approximately 12 hours and pharmacists approximately 16+ hours during their 4-6 years of university education\textsuperscript{105} in Canada. Is it any wonder that any of these health care professionals are hesitant to recommend something so far out of their scope of practice? During their education, based on a minimum of 6720 hours of schooling, this means that less than 1% of

\textsuperscript{104} http://www.phac-aspc.gc.ca/chn-rcs/cah-acps-eng.php
\textsuperscript{105} Informal study: Kelly Finlayson; Hour spent studying alternative therapies, 2014
their time is spent learning about holistic practices, and even then in the classroom it may only be a discussion as to whether CAM therapies are a valid part of a patients’ treatment plan or option, not educating the students as to the potential benefits of these therapies.

A literature review\textsuperscript{106} of 21 surveys of nurse, physicians, social workers, pharmacists and a variety of health care professionals were included that focused on beliefs about CAM efficacy, clinical practice use and referrals, personal use, level of knowledge, communication with patient about CAM and the need for information regarding various CAM therapies were evaluated and the results were not positive for holistic medicine. Health care professionals all wanted more information about complementary alternative medicine, evidence based, before they would feel comfortable recommending any form of CAM. Physicians were more negative compared to other health care providers, less that 10% felt that CAM was as valuable as conventional medicine. Even if there was a positive attitude towards complementary alternative therapies, from physicians or any other health care provider, there was no correlation with CAM referral or prescription patterns.

One concern is that a physicians’ practice is badly set up to promote prevention. Visits are too short, generally under fifteen minutes; doctors are not adequately trained beyond their specializations, as noted above in the informal survey of Canadian healthcare professionals. Their professional habits are focused almost entirely on drugs and surgery as treatment modalities. Disease prevention is considered too “soft,” and yet, if you shift the burden of prevention to the patient, this is where healthcare professionals drop the ball – instead of

\textsuperscript{106} A Literature Review of Health Care Professional Attitudes towards Complementary and Alternative Medicine. Sewitch, M. (Dept. Of Medicine, McGill University), Cepoiu, M. (MD), Rigillo, N (MA), Sproule, D. (MD)
guiding the patient, the physician tells the patient what to do, that leads to an enormous resistance on the patients’ part – no one likes to be told what they have to do. The public has been given countless warnings about smoking, poor diet, and lack of exercise, yet we have by no means eradicated lung cancer, obesity, coronary artery disease, and type II diabetes. Lifestyle disorders prove intractable when people cling to bad lifestyle habits and resist adopting good ones.\textsuperscript{107} This is where CAM therapies can make significant inroads, to each and every patient, because one of its main themes is the return of power to the patient, but citizens of North America have not been taught that this can contribute to an improved lifestyle both physically, emotionally and spiritually.

In Canada and the United States, holistic pharmacies are few and far between. Pharmacists tend to have the most extensive CAM learning at the university level, but are not using that knowledge in their everyday practice. These pharmacists are continuing to use synthetic medications, prescribed by physicians, to help increase their patients’ quality of life rather than try to encourage a more natural route thru diet, exercise and herbal remedies.

One concern that patients may have regarding holistic pharmacies is that a Google\textsuperscript{®} search of holistic pharmacies shows mainly medicinal marijuana pharmacies in the United States. This can lead to patients thinking that all holistic pharmacies carry only medicinal marijuana and no other treatments may be available, or may cause the individual to think that they do not want any part of “that lifestyle” and this will turn their attitudes towards all CAM therapies to the negative, which will have a potentially detrimental effect on their lifestyle and health.

\textsuperscript{107} http://virtualmentor.ama-assn.org/2011/06/oped2-1106.html
Patients are relying on their health care team to provide them with the best care possible; unless Traditional Western Medicine and holistic practitioners can work together – that won’t be a possibility. In North America patients are looking for the following in regards to alternative therapies:

- They want regulation of practices and training (same standards for each practitioner – certification, proof of continuing education).
- They want CAM to be available as part of their normal healthcare; to be paid for by their provincial government in Canada. Patients in the United States are becoming more demanding in their health care demands, both conventional medicine and CAM therapies, since Obamacare has started to become a reality. Obamacare or the Patient Protection and Affordable Care Act (PPACA) is basically the goal of increasing the quality and affordability of health insurance for all American citizens, regardless of pre-existing conditions or sex.\textsuperscript{108}
- They want increased access to CAM (not necessarily by doctors but providers who have had specialty training in the area).

The majority of Canadians, nearly three-quarters, have tried CAM or AM at some point during their lifetime, despite the fact that coverage for these therapies are usually restricted by their government health care insurance plans and private insurance plans. CAM usage is on the rise.

\textsuperscript{108} http://en.wikipedia.org/wiki/Patient_Protection_and_Affordable_Care_Act
in Canada, especially in the west (British Columbia and Alberta). Chiropractic care (40%), massage (35%), relaxation therapy (20%), prayer (18%), herbal therapies (10%) and acupuncture (17%) were the CAM options that were used the most often. These individuals have tried a complementary alternative therapy but there is an issue that arises: these patients don’t continue their therapies due to multiple factors; loss of insurance, socio-economic concerns or their physician doesn’t approve. These patients have then lost a valuable part of their health care.

Canadian patients turned to CAM because it was not that they did not value the opinions of their doctors, but they wanted to be fully informed about all treatment options. 74% of Canadians used an alternative therapy due to the fact that they believed using an alternative medicine therapy together with conventional medicine was better than using either alone.

Those patients also felt that the holistic providers spent more time with them than did the doctors and these patients experienced real and prompt physical relief from AM in contrast to what they had experienced from conventional care. An interesting piece of information that the study done by the Fraser Institute showed: in 2006, sixty-seven percent of patients agreed that just because alternative medicines have not been scientifically tested and approved by Canadian and provincial medical bodies does not mean that they are not effective. The same trend was discovered in 1997 as well.
In the United States, the National Center for Complementary and Alternative Medicine (NCCAM), conducted a study in December 2008, which found that approximately 38 percent of adults (about 4 in 10) and approximately 12 percent of children (about 1 in 9) are using some form of CAM. The most commonly used CAM therapies in the United States are: prayer of own health (43%), prayer of others health (24%), herbalism or phytotherapy (19%), relaxation techniques (12%), chiropractic care (8%) and massage therapy (5%).

The individuals in this study said they were most likely to use CAM because they believed that it would help them when combined with conventional medical treatments, a conventional practitioner recommended CAM and they believed conventional medical treatments alone would not help them with their disease state (28%).

The trend of North Americans using CAM therapies tends to follow this pattern: Caucasian, female, ages 35-55, higher socio-economic lifestyle, and includes some post secondary education (usually a bachelors’ degree) and in the United States, tends to be from the Western states. The concern with the above information is that there have been very few studies done with lower income patients. CAM therapies are not covered by any “government program”, therefore individuals with lower income cannot afford to receive potentially life altering treatments and are going to be at a higher risk for more medical issues in the future.

To get a true, accurate and concise picture of where and which CAM therapies are being used and by whom, there needs to be an openness by patients to health care professionals as to all treatments that they are receiving. This information needs to be recorded, investigated and

shared with both traditional Western medical professionals and holistic practitioners to ensure the best possible medical care for all patients, not just the ones who have the most money or best insurance.

I have no explanation as to why Canadians and Americans have such a contrasting usage in certain CAM therapies. Chiropractor care for example: 40% in Canada and only 8% in the U.S., potentially the difference is due to the cost associated with the therapies and what is covered by government and private insurance companies. Another example is massage therapy: only 5% in the U.S. and almost 35% in Canada, Canadians are more likely to have insurance plans that cover the cost of massage therapy whereas the U.S. insurances tend to not have coverage for that CAM treatment. There is also the belief in both Canada and the United States that CAM therapies are not “mainstream” therefore patients tend to keep their CAM therapies “secret” as they don’t want to be judged in an unflattering or derogatory manner. This “secret” applies to not telling their physicians, certain friends and even individuals that are conducting studies.

Patients have three main reasons as to why they do not tell their family physician or specialist about their CAM therapies: they don’t think the doctor needs to know, they are afraid their doctor will not be happy they are using CAM and the doctor did not ask.  

In 2007, Robert, R. et al, conducted a study on what was the general attitude of medical students in the United States. On the whole respondents endorsed the importance of complementary alternative medicine. Seventy-seven percent of participants agreed to some extent that patients whose doctors know about CAM, in addition to conventional medicine,

111 http://www.kevinmd.com/blog/2013/02/doctors-alternative-medicine.html
benefit more than those whose doctors are only familiar with conventional medicine. Seventy-four percent of participants agreed to some extent that a system of medicine that integrates therapies of both conventional medicine and CAM would be more effective than either conventional medicine or CAM provided independently. Eighty-four percent agreed to some extent that CAM contains beliefs, ideas and therapies from which conventional medicine could benefit.\textsuperscript{112}

This looks to be very promising for the future of alternative medicine; however, there were two themes that emerged from participant comments regarding the alternative medicine education they received in medical school. One participant was quoted as saying, “We did take classes in CAM, but they seemed to be of low quality, the lecturers rarely acknowledged the limitations of the therapies.” Several medical students also commented that the CAM-related education they received was biased to be anti-CAM, and of relatively poor quality compared to the rest of their medical education. Another student stated: “I heard a lot of unscientific nonsense, including from medical students and physicians”. The students who perceive that their training in alternative therapies as inadequate may be significantly less open to recommending therapies or less willing to acknowledge alternative treatment options as valid.\textsuperscript{83}

Conclusions of the study included: ensuring that every medical student receives the same unbiased education on complementary alternative therapies, having a standard for the education will help to increase the likelihood and acceptance of alternate treatments in the future for both patients and healthcare professionals.

\textsuperscript{112} http://www.hindawi.com/journals/ecam/2011/985243/
In North America the use of complementary alternative medicine, along with using conventional medicine, is on the rise. In part I believe due to the increased use of insurance plans, some of which are covering some more conventional complementary therapies, such as acupuncture, naturopath services, nutrition specialists and TCM. Also, patients are becoming more interested in learning about all their options to ensure a healthier lifestyle and to amalgamate therapies to give them the best health care for any disease state. Patients will try an alternative therapy for a variety of reasons; cancer research into why patients try alternatives have led to the following reasons: feeling more in control of their therapy, comfort from touch/talk and time, staying positive, boosting ones’ immune system and reducing side effects from conventional medicines.  

As the internet is readily available to a large portion of the world’s population, patients’ knowledge and interest in trying something different has led to an increase in CAM therapy usage throughout the world, not just specifically in North America. In some regards the increased use of the internet is two-fold, there is an increased interest in learning and trying CAM therapies for various ailments but there is also the risk that the patient will read about a treatment that was done poorly or gone bad by a non-educated or poorly educated holistic practitioner who hasn’t taken into account all the factors of each and every patient, which could led to a negative attitude towards all holistic health care practitioners or CAM therapies in general.

113 http://www.cancerresearchuk.org/about-cancer/cancers-in-general/treatment/complementary-alternative/about/why-people-use-complementary-or-alternative-therapies
To maximize the benefit of complementary alternative medicine in North America; there needs to be more education for health care professionals, consistent regulations and regulatory boards for CAM or AM practitioners, increased patient awareness regarding the benefits of complementary alternative therapies. Also, both government and private insurance companies need to help pay for the valuable service that holistic medicine can provide in both preventing and curing current disease states in patients of all ages, from infants to the elderly.
Reviewing peer-reviewed literature, internet searches and conducting a very basic healthcare professional survey, the differences of opinions on CAM therapies between Europe and North America are both extensive but also very similar.

Patients across the globe seem to be searching for all of the same qualities when it comes to complementary alternative therapies:

- Patients want standardization in regard to education or training for their CAM practitioners. Patients want to know that they are getting the best care possible; they do not want to unknowingly put themselves in a harmful situation due to the fact that the person who is charge of their care doesn’t have the knowledge to prevent that harm or to do potentially further damage.

- Patients want a reliable resource to be able to find a qualified CAM practitioner, there are too many organizations with too little rules and it can quickly become confusing and overwhelming for patients to figure out who is qualified to do what and by whom are these practitioners qualified by.
Patients are looking for a concise, reliable and continuously updated source of information regarding finding a holistic practitioner.

- Patients want private insurances to cover all aspects of CAM therapies (the less common such as aromatherapy, light therapy, dance therapy or colour therapy) not just the most prevalent ones (massage therapy, TCM or naturopathy) that are available to them. Holistic care is individualized and patients should have access to each therapy that they feel would increase their wellbeing without the insurance companies telling them what therapy is “okay and not okay”.

- Patients would appreciate if their government (health care systems) allowed for their CAM therapies to be covered. If patients do not have private insurance, the potential use of CAM therapies drastically reduces simply due to the cost associated with the therapies. If a patient has particular health issues, the patient may not be able to work therefore they will be unable to pay for any treatment options that aren’t covered by their public health care plan therefore that patient doesn’t have access to the best care possible due to a socio-economic situation.

- Patients would like everyone to just get-along. They want the opportunity to tell their primary health care provider about each and every therapy they have tried or are currently using without the fear of ridicule. Patients, health care professionals and CAM practitioners need to respect each other to give
their patients every chance to a healthier, happier and illness prevention lifestyle.

Whether you are looking at patients in Europe or North America, patients are choosing to use some form of complementary alternative therapies. The differences between countries and continents vary on the type of CAM therapies that are favored by patients but there is an overwhelming attitude from patients that they are interested in pursuing an alternative treatment plan to their traditional health care, even if their family physician doesn’t approve of CAM therapies. There have been many studies that have been done over the last twenty years that show approximately 50-80% of people have either tried a CAM therapy or are currently using a CAM therapy, with or without their physician’s knowledge.

WHO suggests that general consumer information regarding CAM therapies may include the following key issues:

- The need for all providers, both CAM practitioners and traditional Western providers, to be aware of the major CAM and conventional therapies in use in order to promote the best treatment strategy to meet or maintain the patients’ needs and prevent potentially dangerous interactions.

- The importance of the need to take charge of one’s own health by being an informed patient

- When relevant, the need for consumers to find out about standard charges and possible health insurance coverage for CAM therapies.
- The importance of ensuing that the provider is competent and provides CAM treatments and products of a certain quality.

What is interesting is the diversity of the therapies used in each country; no two countries (or even provinces/states) has the same top CAM therapy used by patients. In Canada for example, the following was noted: chiropractor was the leading CAM therapy across the country but then each “section” of the country has a variance in what patients are using for therapies. British Columbia, the West Coast, which is known as an open-minded group of individuals have a significantly higher amount of use of all CAM therapies that were studied (massage therapy, spiritual, homeopathic, yoga, energy, etc) and the citizens of British Columbia tend to have a higher socio-economic lifestyle whereas the Atlantic provinces, the East Coast, has a much lower socio-economic lifestyle and the people in these provinces tend to not be as open to alternative ideas as their counterparts in other provinces.  

The differences between countries in the EU are just as diverse as their North American counterparts. Every country has their own most prevalent CAM therapy as noted previously (Austria: energetic medicine, France: mesotherapy, Denmark: visualization, etc.) However, there does seem to be a pattern of use similar in particular groups of culturally related countries, for example the Mediterranean, Scandinavia and German speaking countries. This set of countries use dance therapy and a specific dietary meal plan as a large portion of their holistic practices. The dietary portion is generally based on what is grown in that particular region, and the recipes have been handed down from generation to generation, these recipes
have now traveled away from the specific country of origin and individuals across the globe are now trying these dietary measures to increase their chance of a more healthy, holistic lifestyle.

In an earlier chapter, there was an interesting note that there has been an increase in the belief of spirituality or pray. As of the early 21st century, Christianity has approximately 2.4 billion adherents, out of about 7.2 billion people in the entire world. The faith represents one-third of the world's population and is the largest religion in the world, with the three largest groups being the Catholic Church, Protestant and the Eastern Orthodox Church.\textsuperscript{114} As of 2010, over 1.6 billion of the worlds’ population is Muslims.\textsuperscript{115} The other most popular religions are Hindi, Buddhism, Sikh and Jewish, the common denominator for all the above religions is prayer. The basis of healing, according to religious groups is prayer, no matter what God, if an individual is faced with a medical issue, that individual uses their prayer and spiritual attitude to help overcome or help with their specific medical conditions.

Dr. Harold Koenig, senior author of the \textit{Handbook of Religion and Health}, which is a new release that documents nearly twelve hundred studies on the effects prayer on health, has been quoted as saying “Traditional religious beliefs have a variety of effects on personal health.”\textsuperscript{116}

The studies that are documented in the book show that religious people tend to live healthier lives. An example of some interesting results from the studies conducted at Dartmouth, Yale and Duke Universities include:\textsuperscript{117}

\begin{thebibliography}{99}
\bibitem{114} http://en.wikipedia.org/wiki/Christianity_by_country
\bibitem{115} http://en.wikipedia.org/wiki/Muslim_world
\bibitem{116} http://www.webmd.com/balance/features/can-prayer-heal?page=3
\bibitem{117} Koenig, H. \textit{Handbook of Religion and Health}, Feb. 2012
\end{thebibliography}
1. Heart patients were 14 times more likely to pass away following surgery if they did not participate in some form of religion.

2. Hospitalized patients who never attended church services had an average stay of three times longer than patients who attended a service regularly.

3. In Israel, individuals who attended church and were believed to be “religious” had a 40% lower death rate from cardiovascular disease and cancer.

4. Elderly patients who never or rarely attended church services has a stroke rate double of those who attended regularly.

Individuals in North America and Europe that do not agree, or don’t belong or don’t believe in organized religion are also using an increased form of spirituality. Learning about other cultures, using mediation, having a spirit guide, including even psychics and spiritualists are on the rise in the world, which is leading to a more holistic, natural, not a “manufactured drug” lifestyle.

Health care professionals’ attitudes vary drastically from North America to Europe. The European health care format seems to allow their practitioners, be it physicians, nurses, dentists, veterinarians or other healthcare professionals more of an opportunity to integrate CAM therapies into patients overall health care plan. More attention is given to alternate therapies while at school, where students are more willing to accept and learn new ideas whereas the amount of time spent in North American schools is limited and these professionals must learn more about alternatives after school – which is more difficult for various reasons. These health care professionals are too busy working on what has already been learned, some
individuals feel that if they didn’t learn it at school – it’s of no value, skepticism due to the fact that there are limited evidence based studies, awareness of patients’ lack of expendable income leads to not mentioning CAM therapies, fear of ridicule from patients and/or co-workers or just a general lack of knowledge.

There has also been a movement in Europe and North America to integrate not only holistic medicine for people of all ages but also animals. Traditionally trained veterinarians are now taking non required extensive training in holistic practices to provide their patients and owners with the best and most through care possible. These doctors are treating common pets – dogs and cats but also are using a variety of therapies on race horses and animals in zoos and aquariums. There is the College of Homeopathic Medicine for Animals, located in Vancouver, British Columbia, Canada which has a mission which includes the following: to help inspire and educate veterinarians in homeopathic medicine, while providing a responsible and nurturing environment, the college will promote the integration of homeopathic animal medicine into traditional veterinary practice to create a complete and comprehensive model of animal health care that fulfills Samuel Hahnemann's vision that medicine should "above all, do no harm".

The College also is trying to provide the public and traditionally trained veterinarians with access to state of the art homeopathic and holistic animal medicine and create the upmost highly trained practitioners of homeopathy for animals\textsuperscript{118}. There are multiple on-line programs as well; The College of Integrative Veterinary Therapies, based out of Australia is one of these programs. The program is offered to veterinarians around the world seeking new treatment

\textsuperscript{118} http://www.cahm.ca/
options, exploring a new interest in holistic practices, frustrated with the limitations of the
current tools on hand, patients are asking about alternative therapies or the individual wants to
be philosophically nourished, educated and inspired in a new field.¹¹⁹

There are numerous veterinarians in Canada, the United States, and the UK and also across
Europe who has taken extensive training to be able to practice as a Holistic Veterinarian; there
are multiple websites dedicated to listing the veterinarians, their specialties and their costs
associated with the CAM treatment options that are available to their patients and their
owners. Unfortunately; the schools, programs and associations are not regulated by one sole
association for the veterinarians, so again the public is faced with the dilemma of whether the
treatment and/or practitioner are valid and worth the expenditure – especially since most
animal owners do not have insurance plans.

Europe and to some extent North America, has seen an increase in the use of holistic dentistry.
Holistic dentistry emphasizes the approach of dental care for their patients by looking at it this
way; dental health in the context of their entire physical, emotional and spiritual health. Each
practitioner will have a different approach in their practice, but the commonalities include
strong opposition to the use of amalgam filling – these fillings contain mercury and potentially
other toxic materials, non-surgical approach to gum disease and the belief that root canals are
unnecessary and can trap dental bacteria in the body. Europe was the first to make the
connection and to conduct studies on the relationship between dental-disease problems.

Conditions such as Fibromyalgia, thyroid disorders, Multiple Sclerosis, heart-atherosclerosis

¹¹⁹ http://www.civtedu.org/is-natural-medicine-study-for-me/
disorders, and other diseases have been considerably improved or reversed when amalgam fillings were removed properly by a biological dentist, and the patient was properly chelated to remove the mercury and heavy metal toxins. Countries as Germany, Sweden and others have banned the use of amalgam fillings due to the studies conducted showing a connection between the amalgam fillings and health issues.  

The following are the basic principles used in holistic dentistry in both Europe and North America: avoidance and elimination of toxins from dental materials, proper nutrition for the prevention and potentially reversal of degenerative dental disease, prevention and treatment of gum disease at its biological basis and the prevention and treatment of bite problems. Holistic dentists, on average take an additional one to two years of extra schooling after the completion of traditional dental school. Socio-economic status again steps in to decrease the accessibility of these specialized practitioners, holistic dentists often charge more than their traditional counterparts and treatments are often not covered by private insurances or government plans.

There is an effort being made in both North America and in Europe to try to standardize certain aspects of CAM therapies. An example of this would be the introduction of natural product numbers (NPN) given to herbal remedies that have passed a standardization testing from either the Canadian Food and Drug (CFD) or the Federal Drug Association (FDA) in the United States. This allows the patient to know what exactly is being “put into” their herbal products. The herbal preparations that are given an NPN are free from containments, have the stated amount

120 http://hbmag.com/biological-dentistry-chronic-disease%E2%80%99s-missing-link/
of product in each and every dose, and have been quality tested to ensure the upmost safety for the patient. These products have also undergone some form of EBM, whether it is a blinded study to a peer reviewed set of documentation, to help establish to validity of these products in the market place. Vitamins and minerals were the first products to get the NPNs’, the CFD and the FDA have now included all herbal products, from single entity products (example: gingko or ginger) to combination products (example: Promensil® or BioFlex®).

Manual therapies (particularly massage therapy and osteopathy) have become more regulated in both North America and the EU; practitioners who are advertising that they provide this treatment option must not only obtain a wellrounded education in anatomy and physiology but also must pass a national evaluation, be registered with a licensing body and must show proof that they are continuously maintaining their education by attending and recording education credits. This is promoting confidence in patients to know that these practitioners have achieved a high standard of learned therapies and must maintain that standard.

North America and Europe have both made an effort, from health care practitioners, holistic practitioners and patients, to have an increased knowledge and promote a more holistic, natural lifestyle that puts the patient in control of their well-being. There is still a long way to go to ensure that every individual is being treated with the best health care possible but the process has been started. This will allow more patients will be able to incorporate complementary alternative therapies into their health care regime on a regular basis.
Patients in both North America and Europe are showing an increased interest in pursuing CAM therapies, whether CAM is their first choice or their “last ditch effort”, I believe that we, as holistic practitioners need to help these patients overcome any fears, doubts or general pessimism in complementary alternative therapies in any way we can. This could include: speaking to their physicians or the patients’ family members, making sure that holistic practitioners have a more consistent training and regulation, so that everyone will take the holistic medicinal field more seriously and not continue to think that CAM is only for the “alternative lifestyle” or “hippy-dippy” individuals.

I believe that North American patients are more than willing to try CAM therapies, either due to their unhappiness with their conventional medical treatment or that they want to supplement their treatments with some form of alternative therapy. There are some obstacles that need to be addressed: cost, regulation of therapists, this includes but is not limited to training, certification and continuing education, and the perception from some health care professionals. If North American CAM practitioners could come together to form an educated regulating body for the entire holistic treatment options, I believe that holistic medicine would blossom and become part of everyone’s health care program.
The same could also apply to Europe. There are more patients and medical professionals that use and recommend CAM therapies in Europe. However, again if the issues of cost, education and regulation of CAM practitioners were addressed in a better manner, the possibilities would be endless. There could be treatment options available to all socio-economic classes regardless of where the individuals live; North America, Europe, Australia or South America.

I believe that one of the largest problems, for this discussion, is that there is a lack of consistency in what exactly the definition of complementary alternative treatment or therapies encompasses. If the entire holistic community, along with the Traditional Western medicine community, could agree upon a common definition for CAM therapies, it would simplify the process of regulation of education, practice standards and increase patient, and health care professionals, confidence in holistic practitioners and complementary alternative medicine in general.

Can citizens in North America overcome their attitudes toward CAM therapies? I believe that as a society – we must! Practitioners need to learn to respect each other, and understand that each practitioner may have a specialty that can bring a better quality of life to their patient. Holistic practitioners need to prove that they have the knowledge, training and commitment to give their patients the treatments that will help them the most, without alienating the patients’ physician. Teaching facilities in Europe have increased the time spent for students in the healthcare fields to explore and learn more about CAM therapies, the rest of the world needs to follow the example given by the EU and encourage their students, be them: doctors, nurses,
dentists, social workers, veterinarians or pharmacists to embrace holistic practices and help to incorporate these ideas into their everyday learning and into their eventual practices.

Patients deserve the best possible health care available to them: whether this is solely traditional Western medicine, solely holistic medicine or a combination of both – we as professional health care professionals need to help patients make an educated, informed decision. Practitioners of holistic medicine need to promote standards of practice, education of other health care professionals and demonstrate that a regulating body is patrolling CAM practitioners. Health care professionals and holistic practitioners are going to need to be able to communicate effectively and respect each other to ensure patients are receiving the best possible care. Patients are becoming more educated and demanding more from their health care professional team members.

Complementary alternative medicine is an ever changing therapeutic option for patients around the world. Patients are choosing to make a change to their well-being by accepting and choosing alternative therapies to live a more holistic lifestyle. Practitioners should be welcoming that change with open arms and encouraging and educating their patients to make the best choice for their individual health care treatment plan.


CAMbrella, www.cambrella.eu, European research network for complementary and alternative medicine (CAM) that conducted a research program into the situation of CAM in Europe betweenkk 2010 and 2012. April 2014 to February 2015.


FDA, US Food and Drug Administration, Unapproved Prescription Drugs: Drugs marketed in the United States that do not have required FDA approval, 2014/03/12, April 20, 2015.


Hahnemann, S (1921), The Organon of the Healing Art (6th ed.), aphorism 128.


Hartogensis Martine, FDA to Industry: Let’s increase the availability of safe, effective animal drugs, FDA Voice, Deputy Director, Office of Surveillance and Compliance at FDA’s Center for Veterinary Medicine, 2015, May, 18.


Mercola J, FDA wants more money, claims they are a “bargain”, http://articles.mercola.com/sites/articles/archive/2013/05/01/fda-budget-increase.aspx, May 1, 2013, January 2 2015.


Pai PN, Nephrotic Syndrome, British Homoeopathic Journal, 1969, 58, 94.


Sackett DL, Evidence Based Medicine: what it is and what it isn’t. 


Von Ammon, K, Health Technology Assessment (HTA) and a map of CAM provision in the EU, 2013, September 8, 2014.
Wapner Jessica, How much money do drug companies pay the FDA? 


APPENDIX A

INFORMAL STUDY: HOURS SPENT STUDYING ALTERNATIVE THERAPIES IN CANADA, 2014-07-30

I comprised a short phone interview and an e-mail questionnaire to be answered by traditionally trained health care practitioners. My goal was to determine whether during this traditional training at university, in Canada, was complementary alternative medicine a part of their curriculum and if so, to what extent, i.e. estimate number of hours were dedicated to alternative or holistic care during this time. Also of interest, to what extent did the time spent studying influence recommendations given to patients in their practice. I contacted 60 (56 responded) doctors, 100 (88 responded) nurses and 150 (148 responded) pharmacists throughout Canada.

Questionnaire/phone interview had three basic questions:

1. Did you take any alternative medicine courses during your education?

2. Approximately how many courses or hours did you participate in alternative medicine courses?

3. Do you recommend alternative medicine to your patients? If yes, which types of alternative medicine?

The answers that were allowed were: none, some (1-5 hours), a good amount (6-15 hours) or a large amount (16+ hours).

The following results were found:
Doctors

- None (or can’t remember): 11
- Some (approximately 1-5 hours: one or two classes): 37
- A good amount (approximately 6-15 hours: three to five classes): 4
- Large amount (approximately 16 + hours: over 6 classes): 6

Nurses

- None (or can’t remember): 9
- Some (approximately 1-5 hours: one or two classes): 31
- A good amount (approximately 6-15 hours: three to five classes): 37
- Large amount (approximately 16 + hours: over 6 classes): 11

Pharmacists

- None (or can’t remember): 8
- Some (approximately 1-5 hours: one or two classes): 30
- A good amount (approximately 6-15 hours: three to five classes): 87
- Large amount (approximately 16 + hours: over 6 classes): 28

The health care professionals that were asked recommended: acupuncture, acupressure, massage therapy and spiritual therapy. There were a few that recommended vitamins,
naturopathy and TCM, most felt uncomfortable recommending any sort of complementary alternative therapies or holistic treatments. A few of the respondents (55 in total) made a note that they felt that the education that they did receive only “touched base” but did not go into enough details of each therapy for them to make an informed decision.

Due to the ever increasing use of complementary alternative medicine not only in North America but worldwide, traditionally trained healthcare professionals will need to be more educated in all forms of CAM. If the schools that are training these professionals refuse or do not offer any education in CAM, then the students need to make the extra effort to expand their learning experience and learn more about alternative therapies, due to the fact that when these students go out into practice there will be patients who are using at least one form of CAM, and as a practitioner you need to be informed and have an open mind about alternatives that are beneficial to your patient.

Holistic practitioners could aid in the education of traditionally trained healthcare professionals but offering workshops, newsletters, patient testimonials and studies showing how CAM can help patients, this could be offered to both students and currently practicing professionals. Practitioners could also go into the classroom and help to de-mystify the concept of complementary alternative medicine and educate students on a more regular basis – not just a couple of hours here and there but perhaps a set number of hours or a full course on alternative therapies could be offered by all educational facilities.
As the world grows and changes, all aspects of what is best for us (practitioners) and our patients need to be evaluated, discussed and continuously updated to provide the best care possible.