

# Complementary and Alternative Medicines — The Introductory Perspective

---

Ian N. Olver



‘Two roads diverged in a wood and I took the road less travelled by, And that has made all the difference’

Robert Frost: *The Road Not Taken*

## ABSTRACT

This book aims to provide views of complementary and alternative medicines (CAMs) from multiple perspectives to enable the reader to come to their own informed conclusions. Practitioners of conventional medicine range from those who highlight the dangers of treatments that lack conventional evidence to those who wish to integrate CAMs into conventional practice. The authorship also includes educators and researchers into CAMs, those involved in public policy, regulators and consumers. The term CAMs encompasses a wide range of treatments from the biological and the physical to the mental and energy therapies. Mechanisms of action may not be known and should not be subject to pseudoscientific explanations. There are methodological challenges in researching CAMs. Also, CAMs are regulated differently to conventional medicines and yet the public must

understand that CAMs can have side-effects and should know upon what evidence claims of efficacy are based and how often it is known to be effective. Medical practitioners should be familiar with CAMs so they can respond to their patients' questions and know if there are any problematic interactions between CAMs and conventional therapies. How to integrate CAMs and conventional medicine is a challenge being explored by some medical centres.

*Keywords:* Complementary; Alternative; Conventional; Integrative Medicine.

## INTRODUCTION

This book about complementary and alternative medicines (CAMs) could have easily followed the well-trodden path of reviewing the available evidence and provided yet another set of tedious arguments over the definition of CAMs, and the use of the term itself. We could have followed with a discussion of countless papers estimating the usage of CAMs to treat a variety of illnesses, the relative merits (or otherwise) of complementary treatments and the reasons they are chosen by patients the world over. Instead we chose to 'take the road less travelled by' and let different writers give their own perspective on what makes CAM different, special or challenging.

This is not because the above topics do not warrant special consideration, as many of these issues are found somewhere within the pages of this collection, but all as part of a variety of perspectives on CAMs. Given that there is a confusing and often polarising array of opinions on CAMs, this book is designed to encapsulate a wide array of views, so that the readers can form their own perspectives, by comparing the views expressed, or drawing wisdom from the contributions made by authors from different walks of life.

The contributors range from practitioners of CAMs to several specialists practising conventional 'Western' medicine. Even the latter span those signalling the potential danger of CAMs, because they lack conventional evidence of their efficacy, to those wishing to integrate CAMs into conventional practice. The authorship includes educators and researchers, those involved in public policy

and regulators. Consumers who have had illnesses such as cancer have also given their perspectives, as they have been faced with choices of whether to use CAMs, and they have contributed their insights, although they have not always chosen to display that label.

Complementary and alternative medicines are controversial and there is a confusing array of sincerely held opinions, and of practitioners; some are motivated by a desire to do the best for their patients, some wanting to integrate CAMs and conventional medicine, and others exploiting the uncertainty in these therapies for personal gain.

Consumers can also hold strong opinions for and against CAMs. My research group interviewed patients being treated for cancer about end-of-life decision-making and then analysed their speech to ascertain their views on a variety of issues. CAMs were mentioned by many spontaneously and yet there was a clear distinction between users and non-users.<sup>1</sup>

Against a discourse that holds individuals responsible for their health, users of CAMs valued them as being of both physical and psychological benefit, as part of a desired holistic approach to their care to complement conventional treatment, and were upset at themselves if they failed to continue CAMs, even in the face of practical or financial difficulties. Non-users devalued CAMs for their inability to cure their cancer, although they did not similarly devalue conventional medicine, even if the final outcome was strikingly similar. Moreover, they regarded CAMs users as desperate, or as challenging conventional medical wisdom.

## **WHAT DO WE MEAN BY CAM?**

I will have to admit to not liking the term CAMs, but its use has become widespread and in general people know what is meant. It would be better to use the broader term 'therapies' as this encompasses both medicines and other therapeutic endeavours, such as mind/body or energy treatments. There is also no real distinction between complementary and alternative therapies, as the same non-conventional therapy could be added to, or complement, traditional evidence-based medicine or promoted as an alternative to it. It may be acceptable to conventional medicine practitioners to

use such a therapy as complementary, but not as an alternative to evidence-based effective therapy. So, lumping complementary and alternative together may not be helpful.

Moreover, in Veronica Raszeja's chapter on classification she makes the point that CAMs can be only two positive randomised trials away from being accepted as conventional, which in essence is true. So the same treatment could over time be regarded as alternative, complementary and conventional!

## **THE CLASSIFICATION OF CAM**

Some of the authors in this book have outlined classification schemes by the type of therapy, i.e. whether it is a biological medicine or diet, involves touch (as is the case with forms of massage), tries to influence the body with the mind (as with meditation) or involves tapping into some external energy (as with Qi Gong). Of course, even having classified a therapy as a CAM classifies it as outside the accepted medical paradigm of the culture in which it is found. In China, for example, it was Western medicine that had to be integrated with traditional Chinese medicines, not the other way around.

I could speculate about other possible classification schemes. What if we classified therapies by mechanism of action? That would provide two major problems. Firstly, it would reflect the culture from which the therapy came. Western scientific method and understanding, for example, may seek to identify molecular targets by which a treatment retards the growth of a tumour or to measure a hormonal change that impacts on hormone-sensitive tumours to satisfy itself of a mechanism, but the meridians used in acupuncture or forms of universal energy do not fit that paradigm. Secondly, where would that leave Western medical practices that have developed empirically without knowing precisely how they work (the case for many cytotoxic drugs, where the mechanism was found well after efficacy was established by observation in clinical trials)?

Another claim is that there is a distinction between 'natural' therapies and others. Again this does not stand up to scrutiny. A vitamin may well be natural, but at many times its normal dose it takes on the characteristics of a drug, often with side-effects to

balance against benefit. The body may well find it 'natural' to absorb such nutrients from food, but how natural is it to take a vitamin or antioxidant in the form of a tablet or injection? Furthermore, several cytotoxics are derived from plants, including the taxanes from yew trees and the vinca alkaloids from the periwinkle plant.<sup>2,3</sup> These drugs have a full range of side-effects, which should hardly be considered natural.

I contend that classification may be helpful in communicating what type of therapy is being discussed. It is not helpful if it carries a value judgement about that treatment. For example, having been trained in the Western scientific model I am more comfortable with treatments that fit within that model and I will want to know the level of evidence of efficacy based upon the results of randomised clinical trials that the treatment carries within that model. I will make my judgements about the value of a treatment from that viewpoint. If I came from another culture, however, I may judge as satisfactory a remedy that has been handed down through generations of my ancestors, based upon observations of its efficacy, according to the understanding of illness that is much older than Western medicine. Now, one treatment may actually have better outcomes than the other, but just comparing the background evidence for each may not allow that decision to be made without referring to one's value system. Can research differentiate between what should be regarded as conventional and what should be called a CAM?

## **RESEARCHING CAM**

A possible method of reducing the gulf between conventional Western medicine and CAMs would be to test CAMs using the standards of evidence and methodology required for treatments to be accepted under the Western system. Certainly some CAMs have been accepted as having efficacy as a result of doing just that. Monica Robotin, in her chapter, shows how conventional drugs can evolve from knowledge of herbal remedies. Taking examples from a field of interest of mine (chemotherapy-induced nausea), acupuncture and acupressure, hypnosis and ginger have all shown efficacy in randomised controlled trials.<sup>4-6</sup>

Life, however, isn't always that simple. Take traditional Chinese medicine, for example, where as part of the treatments,

various combinations of naturally occurring substances are offered. As we have discussed, conventional chemotherapy has several drugs also derived from plants. In Western medicine the active ingredient of the plant is sought, purified, often synthesised and then submitted to clinical trial. You could adopt the same techniques for traditional Chinese medicines, but that would be assuming that the activity was due to a single active agent and not the interplay between several components of the plant, an assumption that should not be made. Moreover, reproducible dosing, if this is desired, is more straightforward for a purified single agent than for a mixture of raw plants. Again using nausea as an example in Western practice, the investigation of the anecdotal reports that smoking marijuana helped alleviate post-chemotherapy nausea was fraught with such problems as standardising the dose, let alone being able to do a blinded study with such distinctive side-effects.<sup>7</sup>

When faced with CAMs where the explanation of the activity has no counterpart in Western scientific understanding, as is the case with some of the 'energy' therapies, design of a study becomes highly problematic. Even if a randomised trial is positive, that does not demonstrate that the ascribed mechanism of action is correct. I have addressed these issues in the chapter that describes a study of intercessory prayer. In that situation some may call for prospectively randomised clinical trials that satisfy Consolidated Standards of Reporting Trials (CONSORT) guidelines to test its efficacy, whereas others reject the possibility that metaphysical phenomena should or could be investigated using these traditional methodologies.<sup>8,9</sup> Emerging fields such as psychoneuroimmunology also provide difficult design issues, as immunological endpoints that can be influenced by so many things may be impacted upon by psychological symptoms such as stress and the research must cross disciplines to explore the interactions.

Do all complementary therapies have to be subjected to randomised trials before they are integrated into clinical practice? Take aromatherapy, for example. I have seen this used by nursing staff to improve the comfort of patients based upon their anecdotal experience that patients find it helpful, which is further reinforced by positive feedback from individual patients. Given that the chance of harm is minimal, interactions with conventional therapy are unlikely and this is a supplement to evidence-based treatments,

an argument could be made for its use without a randomised trial, given that the resources required to provide randomised controlled trial evidence may be better allocated elsewhere.

Having said that, it has often been claimed that no money is available to conduct research into CAMs. However, the NHMRC (National Health and Medical Research Council) has, of recent years, earmarked money specifically for CAMs research. That aside, what is required in general is very basic. Keeping a record of the outcome and the side-effects of a CAM and particularly knowing the denominator; how many were treated to obtain any allegedly positive effect seen is a good way to make a start in the evaluation of the outcome.

## **REGULATION OF CAM**

Ken Harvey has given us his perspective on the regulation of CAMs in Australia and Loretta Marron has expressed a critical perspective, especially when the regulation of CAMs is compared with the regulation of pharmaceuticals and medical devices. In my opinion, Australia has a very good drug regulation system, where detailed data are scrutinised to assess proof of a drug's efficacy and acceptable toxicity before a drug can be registered. Further scrutiny occurs about its cost-effectiveness when a drug is assessed for listing on the Pharmaceutical Benefits scheme. This process has served the public well, protecting them from untested drugs, poorly manufactured drugs and extravagant claims of efficacy and ensuring, as far as possible, that a drug or device is safe. This extensive process of review is costly and the aim is to largely recover the cost from the drug companies that will reap the financial rewards of a successful product.

Such a scheme is not in place for complementary and alternative medicines and devices, despite the fact that the use of such products is just as extensive as that of conventional drugs. There are many reasons for this. Firstly, as we have discussed, the scientific evidence of efficacy may not exist, beyond anecdotes and testimonials for CAMs. Some CAMs may not be classified as drugs, but as foods or food supplements. There may be different commercial imperatives for CAMs, depending on what can be patented and this may impact on the willingness of a commercial sponsor to pay

for a process of evaluation as extensive as that required for pharmaceutical products. The government, however, does have a concern for the welfare of the population, and its initial priority is to assess, as far as possible, the safety of a product and whether it meets satisfactory manufacturing standards. This does not address the question of efficacy; however, there are restrictions on what a manufacturer of a CAM can claim about efficacy if data are not available. Short of assessing efficacy, the collection of data about a CAM's pedigree may be useful, as an indication of the likelihood of efficacy. If I was trying to make a decision about using a CAM, I would certainly be more impressed with the claims associated with a drug that had been handed down through generations of a cultural group, as compared with something concocted in someone's back yard last Friday.

## **WHAT TO TELL THE PUBLIC ABOUT CAM**

The information about CAMs seems to me to travel faster through a population than that about conventional evidence-based therapies. There may be many reasons for this. On the positive side, often CAMs can be administered by the patient, which is empowering. Sometimes this leads to unfounded conspiracy theories purporting that information about CAMs has been purposely suppressed, to keep doctors and the pharmaceutical industry in business! There is also often the perception that because a product is deemed 'natural' it will not have any side-effects. Many in the general public do not understand the nature of the evidence required for conventional medicines, and may therefore believe claims about CAMs, without realising that they lack similar evidence to support them.

There can be a harmful side to patients accepting concepts such as being able to use mental powers to rid themselves of cancer, because failure to control the tumour can lead to patients feeling guilty over not trying hard enough. It is rather cruel to add that suggestion to the distress that accompanies a diagnosis of cancer.

So what I suggest here is that rather than discussing with the public the details of each CAM (something they can obtain readily anyway), we focus the discussion on the nature and extent of the available evidence, so that they can make an informed choice

about any treatment, conventional or CAMs, that is being offered. I used to encourage my patients to ask the same questions of any treatment.

The first of these is what is the denominator? A treatment that works for one in every two people who try it is quite different from a treatment that works for one in ten, or one in a thousand. Often if an alternative treatment has only been promoted by anecdote and testimonial, the information about the denominator will not be available, and that should sound a note of caution, unless individuals are willing to abandon the Western scientific paradigm. The second issue is to examine the rationale behind a treatment. It is simply not the case that if something is good for you, twice as much is twice as good and yet that is often behind therapies such as high-dose vitamins, for example. Conversely, if too much of something is damaging to your health, it does not mean that it should be cut out altogether, which is the rationale for some extreme diets.

A third piece of advice is to be careful of pseudo-scientific explanations. The immune system is often referred to as though it is a simple system that can overall be stimulated or suppressed by a specific treatment. We know, through the advent of targeted treatments, that to be effective, very specific parts of the immune system need to be targeted to obtain the shrinkage of a cancer.

Another common target claimed for various CAMs is their ability to detoxify the body. My medical training taught me about the important role of the liver and kidneys in removing toxic waste products from the body. So, I am totally at a loss to explain how manoeuvres such as coffee enemas could detoxify anything. And what are these toxins anyway? Incidentally, the coffee enema fails my next test. If it doesn't even sound sensible, don't do it. Ray Lowenthal shares with us, in this book, his experience of a lifetime of collecting unorthodox therapies and bizarre claims for their mode of action. I can only conclude that if you don't know why something works, and there are many examples in orthodox medicine where that is the case, perhaps it is better just to admit that you don't know, rather than construct a mechanism of action. In summary, I encourage patients to ask many questions about any treatment they are offered, and even question the answers they receive until they understand enough to make an informed choice.

## **WHAT MEDICAL PRACTITIONERS AND STUDENTS SHOULD KNOW ABOUT CAM**

Craig Hassed, in his chapter, has stressed the importance of medical students having a good working knowledge of CAMs in order to be able to communicate with their patients, the majority of whom will be taking some form of CAM in addition to their conventional therapy. What I would like to stress, however, is that even medical practitioners who are not particularly interested in exploring treatments outside orthodox medical practice must be aware of which CAMs interact with conventional treatments, such as the widespread use of CAMs. Unfortunately there is a propensity for patients not to report use of CAMs to their medical practitioners if they perceive that the practitioner will disapprove of their choice.

Indeed, the enhanced communication with patients that may result from having some knowledge of CAMs may be very useful, both in the therapeutic relationship and in guiding a patient through the mass of information about both CAMs and conventional treatment options. Also, keeping up with CAMs will mean being more aware when, as a result of trials, a CAM treatment has crossed to the mainstream. Clinicians with a research bent may also gain cues for fruitful investigations in patients who report the outcomes of their CAMs use.

## **INTEGRATE CAM ON WHAT BASIS?**

Consumers who use CAMs would like to experience some integration of conventional medicine and CAMs. Some conventional medical practitioners are trying to integrate the two, for example David Joske relates his perspective on how to do this in his chapter. How do we choose what to integrate? It is tempting to say that we should integrate those CAMs for which the evidence of efficacy has been demonstrated in randomised trials, but that is not really integration, that is just a CAM crossing over to being accepted by conventional criteria. We could integrate certain types of CAMs as complementary therapies, like massage or aromatherapy where the toxicity is very low, even if their efficacy has not been demonstrated by more than individual case reports of patients gaining

comfort from them. However, we should be encouraged to gather data about potentially useful CAMs. It is also important to realise that harm not only refers to side-effects, but may also be measured in terms of the opportunity cost for an individual to use time and money in pursuits other than on an ineffective CAM.

What integration should be able to achieve is better communication with patients, thereby allowing them to make choices outside conventional medicine of using complementary therapies, although mainstream medicine would not accept the use of a CAM as an alternative to a conventional therapy that was known to be effective.

These choices are difficult and individuals often hold passionate views on this topic. There is rarely, however, a complete separation between CAMs and conventional medicine, but evidence-based medicine is currently the prevailing paradigm in the West. I understand that individuals are the products of their social background and education, which leads to different views on what represents mainstream. I am very much influenced by my orthodox medical training and accept this as a basis for recommending treatments. Yet, I can share the experience of investigating a CAM, with surprising results within that paradigm. My only personal use of CAM was as a result of my mother swearing by tincture of myrrh for aphthous ulcers, and without knowing the evidence I tried it and found it effective. I suspect that personal experiences dictating opinions on specific CAMs are not uncommon. I also suspect that personal experience motivates many to adopt various CAMs, and integrating is not about suddenly overturning the principles of orthodox practice, but recognising individual experience as legitimate. These are not necessarily sufficient grounds on which to recommend a CAM more widely, but a willingness to accommodate an individual's viewpoint and strengthen the therapeutic relationship as a result.

The purpose of this book was to present a wide range of perspectives on CAMs, so that the readers can hear the opinions and come to their own position. I will not have accommodated every viewpoint, but 22 chapters-worth is a good place to begin to understand the complexity of this topic. I invite you to join me in this exploration, where the path chosen is the 'road less travelled by'.

## REFERENCES

1. Elliott JA, Kealey CP, Olver IN. (Using) complementary and alternative medicine: the perceptions of palliative patients with cancer. *J Palliat Med* **11**(1):58–67 (2008).
2. Houghton PJ. The role of plants in traditional medicine and current therapy. *J Altern Complement Med* **1**:131–143 (1995).
3. Noble RL, Beer CT, Cutts JH. Role of chance observations in chemotherapy: Vinca rosea. *Ann N Y Acad Sci* **76**:882–894 (1958).
4. Melcahrt D, Ihbe Heffinger A, Leps B, *et al.* Acupuncture and acupressure for the prevention of chemotherapy-induced nausea — a randomised cross-over pilot study. *Support Care Cancer* **14**:878–882 (2006).
5. Ryan JL, Heckler C, Dakhil SR, *et al.* Ginger for chemotherapy-related nausea in cancer patients: a URCC CCOP randomized, double-blind, placebo-controlled clinical trial of 644 cancer patients. *J Clin Oncol* **27**:15s (2009) (suppl; abstr 9511).
6. Richardson J, Smith JE, McCall G, *et al.* Hypnosis for nausea and vomiting in cancer chemotherapy: a systematic review of the research evidence. *Eur J Cancer Care* **16**:402–412 (2007).
7. Gralla RJ, Tyson LB, Bordin LA, *et al.* Antiemetic therapy: a review of recent studies and a report of a random assignment trial comparing metoclopramide with delta-9-tetrahydrocannabinol. *Cancer Treat Rep* **68**:163–172 (1984).
8. Moher D, Hopewell S, Schulz KF, *et al.* CONSORT 2010 explanation and elaboration: updated guidelines for reporting parallel group randomised trials. *BMJ* **340**:c869 (2010).
9. Halperin EC. Should academic medical centres conduct clinical trials of the efficacy of intercessory prayer? *Acad Med* **76**:791–797 (2001).