A practical overview of "complementary & alternative" medicine

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Introduction

"Alternative Medicine" refers to treatments that are "generally not used or recommended within the context of the mainstream biomedical community".[1] As a result, Complementary and Alternative Medicine (CAM) is dependent on the prevailing acceptances of the culture. An example would be the use of herbal products. Sales of these in the European Union (1996) were estimated at $7 billion U.S. dollars. And in Germany, which accounted for half of such sales, up to 80% of physicians routinely prescribe herbs as part of clinical therapy.[2] In North America, the use of herbal products would be classified as unconventional or experimental medicine.

Over the past few years, we have witnessed an explosion of interest in CAM. The goals of this article will be: (1) explore this phenomenon in detail; (2) add further definition and understanding of CAM and (3) conclude with recommendations for integrating such approaches into one's professional practice.

Why alternative medicine?

There are several noteworthy studies documenting the interest of the public and medical practitioners in CAM.

The Public and CAM

A recent random telephone survey of 2055 adults by Eisenberg et.al.[3] revealed that 42.1% of adults in 1997 had used CAM during the previous year. This is an increase from 33.8% of adults in an earlier landmark 1990 study.[4] It was also extrapolated from these studies that the use of CAM practitioners rose from 427 million to 629 million visits, thereby exceeding total visits to all US primary care MDs. Estimated expenditures for such services reveal a 45.2% increase to $21.2 billion in 1997. The total out-of-pocket expenditures for CAM including costs of herbal therapies, megavitamins, diet products, CAM literature and equipment was conservatively estimated to be $27.0 billion. This compares to the expenditures for all US physician services in the same year ($29.3 billion). Higher use was noted in women, ages 25-40 years with a higher income and education bracket.

Similar findings were noted in recent Canadian studies. The use of CAM was rising from 20% of adults over age 18 in 1992 to 42% in 1997. Again, the highest use noted in women of higher income and ages 35-54.[5] Regional disparities were also noted with the greatest use in the western provinces in one national survey of 17,626 individuals.[6]

Prevalence of CAM use

In the JAMA study[3] the rates of CAM use were:

Type of CAM	*% of respondents using it over past year*
1. Relaxation therapies	16.3
2. Herbals (an increase from 2.5% in 1990!)	12.1
3. Massage	11.1
4. Chiropractic	11.0
5. Spiritual healing	7.0
6. Aromatherapy	5.6
7. Megavitamins	5.5
8. Self help groups	4.8
9. Imagery	4.5
10. Commercial diets	4.4
11. Folk Remedies	4.2
12. Lifestyle diets	4.0
13. Energy Healing	3.8
14. Homeopathy	3.4
15. Neural therapy	1.7
16. Hypnosis	1.2
17. Biofeedback	1.0
18. Acupuncture	1.0
19. Naturopathy	0.7
20. Chelation therapy	0.13

The Reasons given for using CAM

In the NEJM study,[4] the reasons given for turning to CAM were as follows:

48% stated that it does not hurt and may help a bit
34% noted that regular medicines were not working
33% stated that it was more natural
23% reported having side effects from medicines.

The fourteen most common conditions of patients using unconventional medicine in 1997 were[3]:

Condition reported for using CAM	*% reporting*
Back problems (most common)	24.0%
Allergies	20.7
Fatigue	16.7
Arthritis	16.6
Headaches	12.9

Neck problems	12.1
High blood pressure	10.9
Sprains and strains	10.8
Insomnia	9.3
Lung problems	8.7
Skin conditions	8.6
Digestive problems	8.2
Depression (severe)	5.6
Anxiety attacks	5.5

High rates of usage have also been reported in oncology patients (40-80%), HIV patients (78%), psoriasis (43%), atopic dermatitis (51%), and irritable bowel syndrome (33%).[7] A recent study on rehabilitation outpatients reported that 29.1% had used one or more alternative therapies in the past year with 53% of such patients reporting some degree of efficacy.[8] Another telephone survey of individuals with physical disabilities revealed a 57.1% use of CAM.[9] Rheumatology patients in a Canadian study reported a 66% usage rate of alternative medicine in addition to hospital based therapies.[10] Fibromyalgia patients report an even higher use of 91% with greatest satisfaction ratings for spiritual interventions.[11] A Portland, Oregon study of family practice patients revealed a 50% usage.[12]

From these and the general population studies, we can conclude that the majority of CAM users are female, well to do, educated baby-boomers who have chronic mild conditions (musculoskeletal and stress-related disorders).

Physicians and CAM

There is an increasing trend for physicians in North America to refer patients to practitioners of CAM. One 1992 Canadian study of 400 MDs found that 65% of Ontario and 44% of Albertan family physicians make such referrals.[13] The perception of usefulness was also rated as follows:

Alternative therapy:	*% MDs who perceived CAM as useful or very useful:*
Acupuncture (highest)	71%
Chiropractic	59
Hypnosis	55
Osteopathy	34
Herbal medicine	17
Faith healing	16
Homeopathy	12
Naturopathy	9
Reflexology	7

Preliminary results of a 1998 study of Rehabilitation Medicine specialists (physiatrists) in Ontario,[14] reveals a similar referral rate to CAM practitioners. The perception of usefulness was highest for (in descending order):

1. Acupuncture
2. Chiropractic
3. Biofeedback
4. Hypnosis
5. Herbal medicine
6. Osteopathy

When questioned about specific supplements, 60% of those surveyed indicated that glucosamine sulfate was useful.

In stark contrast, earlier studies on European physicians found even higher rates of CAM use:

In Germany, 95% of MDs use herbalism, neural therapy and homeopathy at least occasionally.[15] As of 1993, herbal medicine is a mandatory course in German medical schools.[2]

In the Netherlands, a survey of 600 MDs revealed that 90% make referrals for CAM, and 47% practice some form of it.[16] Two older studies on New Zealand MDs reveal that 69% and 77% make such referrals. (the top three choices are acupuncture, osteopathy, and massage).[17,18] In the United Kingdom, 93% of GPs (General Practitioners) and 70% of hospital-based MDs make referrals (homeopathy, acupuncture and hypnosis are the top three choices). Twenty percent of GPs and 12% of hospital MDs practice CAM.[13]

From this data, it can be concluded that physicians in North America lag behind their European and Australasian counterparts in embracing CAM! With the increasing demand for CAM by the public, it becomes all the more important for physicians here to at least be knowledgeable about such approaches. This was also stressed in recent studies of specialists as well.[19]

What is alternative medicine?

When the National Institutes of Health (NIH) set up the Office of Alternative Medicine in 1993, it originally defined "Alternative or Complementary Medicine" as therapies that:

1. lack sufficient documentation for safety and effectiveness in the United States

2. are generally not taught widely in US medical schools

3. are not usually reimbursed by health insurance providers.

It is apparent now that such criteria in many

Table 2: The NIH categories of CAM	*Examples in each category:*
1. Bioelectromagnetic applications:	Artificial lighting, Blue light treatment, Electroacupuncture, Electromagnetic fields, Electrostimulation, Magneto-resonance Spectroscopy, Neuromagnetic stimulation devices, UV light irradiation
2. Biological and Pharmacological Treatments:	Antineoplastons, Anti-oxidizing agents, Apitherapy, Aromatherapy, Cartilage products (shark), Cell therapy, Chelation therapy, Coley's Toxins, Colonics, Immunoaugmentation, Iscador, Mesotherapy, Metabolic therapy, MTH-68, Neural therapy, Oxygen therapy, Ozone therapy, Prolotherapy, Reconstructive therapy, 714-X
3. Diet, Nutrition, Lifestyle:	Alternative diets, Gerson therapy, Macrobiotics, Megavitamins, Nutritional supplements, Probiotic therapy, Smoking cessation, Weight loss programs.
4. Herbal Medicine:	The top ten prescribed herbs in Germany (1997) are: *Ginkgo biloba*, St. John's wort, Horse chestnut seed, Brewer's yeast, Hawthorn, Myrtle, Saw palmetto, Stinging nettle root, Ivy, Mistletoe.[2] In the USA (1997), the estimated number of Americans taking: *Ginkgo biloba* 10.8 million St. John's wort 7.5 million Echinacea 7.3 million *(Note: herbs are the main treatment for 80% of the world's population. Twenty five percent of prescription drugs are plant derived such as digitalis, morphine, vincristine, steroid hormones, gaviscon etc.).*[20]
5. Manual Healing:	Acupressure (Shiatsu), Alexander Technique, Biofield therapeutics, Chiropractic medicine, Chiropody, Craniosacral therapy, Ear candling, Feldenkrais Method, Hydrotherapy, Iridology, Massage therapy, Osteopathy, Polarity therapy, Reflexology, Rolfing, Therapeutic touch, Trager Method, Zone Therapy
6. Mind-Body Control,	Art therapy, Behavioral therapy, Biofeedback, Color therapy, Counseling, Dance therapy, Faith healing, Feng Shui, Guided imagery, Gurdieff, Humor therapy, Hunan-Hawaiian Shamanism, Hypnotherapy, Jin shin, Krisnamurti, Meditation, Mental healing, Music therapy, Ohashiatsu, Prayer therapy, Psychotherapy, Reiki, Rubenfeld synergy, Relaxation techniques, Sufiism, Support groups, Tae Te Ching, Tai Chi, Tibetin-Buddhism, Vision therapy.

instances no longer apply. In fact, over 50% of medical schools including Harvard, Stanford, and Johns Hopkins now teach courses in alternative medicine. In Portland, Oregon, a pilot project has been launched where herbals would be covered by Blue Cross insurance plans. More and more research is being published demonstrating safety, effectiveness and scientific validity for therapies including some of those listed above in Table 2.

How to understand/implement alternative medicine

I would propose that an easier approach to categorizing CAM be based on scientific paradigm and evidence-based studies:

Type I CAM—follows current scientific models (of anatomy, biochemistry, physiology etc.)

Type II CAM—requires new scientific paradigm (e.g.

bioenergetic model[21])

For each of the above "Types", one needs to examine evidence-based studies (after Sackett criteria.[22])

Evidence A: Supported by one or more level 1 studies. (large randomized trials with clear-cut results—low risk of error)

Evidence B: Supported by one or more level 2 studies.(small randomized trials with less certain results—moderate to high risk of error)

Evidence C: Supported by level 3, 4 or 5 studies. (3–nonrandomized trials with concurrent or contemporaneous controls), (4–nonrandomized trials with historical controls), (5–case series with no controls)

Some examples of each category are as follows:

IA: Glucosamine sulfate in treating osteoarthritis.[23] (Over 300 studies including 20 randomized double-blind controlled trials, accounting for more than 6000 patients with efficacy ranging from 72 to 80% in different forms of arthritis (knee, hip, spine, hand, shoulder etc.)

St. John's wort for depression.[24] (metanalysis of 23 trials with 1757 patients; precise mechanism of action has still to be worked out)

IB: Manipulation[25] and prolotherapy[26] for chronic low back pain.

IC: EEG biofeedback for attention deficit disorder,[27] EMG Biofeedback for headache.[28]

IIA: Homeopathy for general use.[29]

IIB: Acupuncture for nausea.[30]

IIC: Prayer for cardiac patients.[31]

In a review of the evidence-based literature on CAM, the following was noted:

Most herbal and biological/pharmacological products fall into the IB or C category. With funding for larger clinical trials (such as $4 million from the NIH to Duke University for the study of St. John's wort), one would expect more "A" results in the near future.

It is difficult to do proper controls for many of the Manual Healing and Mind-Body Control types of therapies. Such studies would entail much greater expense and complexity. These treatments, unlike those for single-agent remedies, are less reproducible and often involve dynamics of the clinician-patient relationship. Another source of variation is the concept that patients may not have a single "correct" diagnosis. Thus, these studies at best fall in the B/C level.

Even with studies supporting Type II therapies, a paradigm shift is required for acceptance. Results can also be interpreted to fit one's preferred paradigm.[32] There would appear to be more openness to those alternative therapies that fit current models of thinking.[33]

Recommendations on "integrating" CAM

"Integrative Medicine" is a term first coined by Dr. Andrew Weil MD[34] that looks at integrating conventional allopathic and complementary alternative medicine approaches. "Rational Medicine" is a term coined by Dr. Michael Murray, ND in his editorial describing this oncoming paradigm shift.[35]

For physicians practicing CAM: one must increase the responsibility of following/documenting patients being treated and reporting outcomes. This includes using well-known study/research tools that measure treatment effectiveness and also patient satisfaction, quality of life and level of function. Pooling one's data with other practitioners will increase the validity of such outcome and cost benefit analyses. It is also important to be fully familiar with adverse effects (including potentially fatal ones!)[36-39] and have properly signed informed consents. One should check with one's practice insurer and disciplinary body as regular malpractice insurance might not cover CAM done by or under the supervision of the physician.

For physicians recommending and/or following patients using CAM: Guidelines have been proposed by the American College of Physicians.[40] and the National Institutes of Health.[41] There is also the need to proactively inquire of patients about their use of alternative medicine. The NEJM study demonstrated that 72% of CAM patients never reported such use to their family MDs![4] This is all extremely important with increasing case reports of CAM adverse effects,[42] and interactions with conventional drugs.[43,44] It has also been reported that among the 44% of adults who regularly take prescription drugs, nearly 1 in 5 reported the concurrent use of at least one herbal or megavitamin product.[3]

For CAM practitioners: Rational and integrative medicine also requires open communication between all parties. A recent British study[45] documents that 75% of patients seeing conventional MDs and 75% of patients seeing CAM practitioners reported that cross-referrals had never been discussed. Clearly there is a need for both allopathic and CAM practitioners to work together (at least communicate!) for the common good of the patient.

Lastly, a word for physicians who ignore CAM: The JAMA) article[3] documents that from 1990 to 1997, visits to primary care MDs dropped slightly from 387 million to 385 million. During that same period, visits to CAM practitioners rose from 427 million to 629 million! The demand for herbals and natural supple-

ments continues to grow—with sales increasing at better than 10% a year. From a recent Time article comes the reason for this: At the root are *"the fears and desires of 80 million aging baby boomers who are eager to seize control of their medical destinies."*[18] Patients will demand not only accessible physicians but also those who are knowledgeable in the treatment options (traditional and CAM), risks/benefits of each and up to date "real evidence" of efficacy. The number of primary care physicians who choose to ignore and "disbelieve" CAM will likely dwindle in the near future.

Voltaire once said "The art of medicine consists in amusing the patient while nature cures the disease." Hopefully, as the new millennium dawns, a rational integrative paradigm to medicine will shed new light on the age-old problems of chronic disease, pain and suffering. By utilizing the best of allopathic and complementary natural approaches, one hopes that our patients will not just be amused, but also empowered to achieve greater health and vitality.

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