"Knowledge Stems From Disagreements"

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No concise and comprehensive definition for Complementary and Alternative Medicine yet exists. Eisenberg et al. [1] recently suggested defining CAM as any "medical intervention not taught widely at (U.S.) medical schools or generally available at (U.S.) hospitals." This definition accentuates the limitations inherent in any attempt at mustering under a common umbrella fields as diverse as CAM, it defines what CAM is not, without stating anything about what it is.

The conflict between conventional and non-conventional medicine, now termed CAM, dates back as far as Hippocrates [2]. This conflict has always been emotionally loaded, as may be expected whenever two such diametric paradigms clash [3]. This struggle has ebbed and flowed throughout history, with non-conventional medicine decidedly out of favor since the emergence of the Cartesian-Newtonian paradigm in the seventeenth century. In the biomedical sciences, this paradigm has led to innumerable paramount achievements. However, the strict adherence of medicine to the Cartesian-Newtonian paradigm has not been without cost: namely the "mechanistic" view of living organisms and the resulting mind-body split. "I do not recognize any difference between the machines made by craftsmen and the various bodies that nature alone composes" – declares Descartes [4]. Animals and humans are "clocks... composed... of wheels and springs" [5].

The first breach in the Cartesian worldview appeared with the advent of relativity and quantum physics. The phenomena observed in these new fields of physics could not be reconciled with the previous worldview. A new language was necessary, a new model of thought. This fundamental shift in thinking led to profound changes in the understanding of matter and its relationship to mind and body [6–8]. A number of leading contemporary scientists and philosophers have gone so far as to conclude that the universe is fundamentally holistic [7,9–12]. The new worldview regards the cosmos as a complex system in which a change in one of its elements affects the others and in which a system is more than the sum of its parts. This worldview now touches all walks of human endeavor: science, sociology, economics, philosophy, information technology [8] and to no less an extent, medicine. CAM, along with other movements such as ecology, feminism, etc., has been swept along by this tsunami [8].

Patrons of the scientific literature will readily recognize this trend. In 1962 only six references to homeopathy appeared in the peer-reviewed literature, and only three mentioned complementary medicine. Forty years later, in 2002, the term "homeopathy" was found 180 times in peer-reviewed journals, and the term "CAM" over 1,700 times [13]. A 1983 survey of Israeli pharmacies recorded approximately 2,500 homeopathic prescriptions a month nationwide. In 1990 the number had increased to nearly 15,000/month [14]. Today it would be difficult to repeat such a study, since in 1983 only 11 pharmacies dispensed homeopathic remedies in Israel, whereas today they may be purchased in almost any pharmacy.

In 1993, Eisenberg et al. [1] published the surprising results of a survey on the usage of CAM in the United States. In this study it was shown that 34% of Americans used CAM, while the number of visits to CAM practitioners, estimated at 425 million, exceeded the number of visits to all U.S. primary care physicians combined (388 million). Expenditures associated with the use of unconventional therapy amounted to approximately $13.7 billion, three-quarters out-of-pocket. This figure is comparable to the $12.8 billion spent out-of-pocket annually for all hospitalizations in the United States. Lest one think these figures represent the high-water mark, the results 7 years later reinforce the trend. A paper by the same group showed a rapid increase in the use of CAM to 42.1% of Americans in 1997 [15]. The number of visits to alternative medicine practitioners increased to 629 million, far outnumbering total visits to all U.S. primary care physicians. Estimated expenditures for alternative medical professional services increased by 45.2% between 1990 and 1997 and were conservatively estimated at $21.2 billion, with at least $12.2 billion paid out-of-pocket. This exceeds the 1997 out-of-pocket expenditures for all U.S. hospitalizations. Similar numbers were noted in Europe, where the use of CAM ranges between 30 and 50% [16]. This meteoric rise in interest has not stopped at the doors of academic institutions. Whereas in the 1980s it was impossible to study a CAM subject at any academic institution, by 1996 64% of United States medical schools offered courses on CAM [17]. Two years later, the number had already increased to 88% [18].

CAM = complementary and alternative medicine

Noting this trend, in 1991 the U.S. Congress appropriated two million dollars to the establishment of an office within the National Institutes of Health to investigate and evaluate promising non-conventional medical practices. In the ensuing decade, this office was upgraded to a "center" and its annual budget now totals $114.1 million [19]. These figures attest to the dramatic increase in interest in CAM, but do not address the question of efficacy.

This issue of *IMAJ* includes a challenging paper by Shmueli and Shuval [20] assessing the prevalence of consultations with non-conventional medicine providers and the changes in that prevalence between 1993 and 2000. In 1993, 6% of the Israeli population reported consulting at least one non-conventional medical provider during the previous year. In 2000 prevalence increased to 10%. Shmueli and Shuval conclude that between 1993 and 2000, non-conventional medicine in Israel matured from a cottage industry into a mainstream medical commodity. They also found that acupuncture, homeopathy and, in 2000, chiropractic, were the most popular non-conventional modalities, that lower back pain was the leading problem for which care was sought, and that the main reason for consulting non-conventional medicine was a reluctance to use drugs or to undergo an invasive procedure. While a significant proportion of the consumers continue to use conventional medicine, 60–75% of the patients using non-conventional medicine reported that the complementary treatment helped.

To practitioners of conventional medicine, the figures presented by Shmueli and Shuval [20] appear to be an underestimation. The popularity of CAM in Israel is soaring and most practitioners of conventional medicine realize that many of their patients are frequenting CAM, though often hesitating to disclose this fact.

How should we conventional practitioners respond? Should we stick steadfast to the orthodox scientific line that any diagnostic or therapeutic modality that has not been subjected to randomized placebo-controlled experiments should be regarded as inefficacious or charlatanism? Should we discourage our patients from using CAM, indicating to them that CAM is mostly unproven and unsubstantiated medicine that may also be harmful?

The answers are complex. In their survey, Shmueli and Shuval found that 60% of the patients were satisfied with the care delivered by their primary care physician and 58% were satisfied with specialist care. However, they also found an inverse relation between satisfaction with conventional care and the tendency to use CAM.

Kaptchuk and Eisenberg [21] of the Harvard Medical School maintain that after many years during which the medical community ignored or vehemently fought CAM, the situation in recent years has changed and that we are witnessing the emergence of open debate and communication between conventional and CAM practitioners. According to these authors, this new dialogue does not stem from CAM research, which remains sparse, usually negative and conflicting, but to the recognition by the various components of the medical establishment (medical schools, medical associations, the pharmaceutical industry, etc.) that the healthcare agenda is now dictated by the consumer and no longer by the customary providers.

Our post-modern era is characterized by pluralism in areas as diverse as politics and religion, and healthcare is no exception. The continuous rise in the use of CAM, as indicated by Shmueli and Shuval, and similar reports from Europe and the U.S., are forcing conventional medical leadership to realize that orthodox medicine, with its ultra-scientific high-tech approach, is losing its spell over patients, who are seeking more personalized therapeutic alternatives.

In light of the above, it would seem that a more receptive approach of the medical establishment towards CAM is indicated. It is our view that CAM should be incorporated into the curriculum of the Israeli medical schools in a selective manner. These curricula should be limited to those CAM modalities that have already demonstrated positive results in at least some randomized controlled trials (such as acupuncture, manipulation techniques, herbal medicine, etc.) and CAM modalities that are considered to contribute to a better perception and acceptance of disease by the patients, possibly through an "augmented" placebo effect (such as mind-body techniques). CAM modalities that are not supported by at least some evidence (such as "energy" healing, alien abduction therapy, etc.) should be excluded from the curricula, condemned and even outlawed. This opinion is in accordance with recommendations by the Judge Elon Commission [22]. The Elon Commission would further "view favorably the development of syllabi and evaluation methods...within a conventional scientific framework" [22]. This stance is supported by a recent position paper published by the Israel Medical Association [23].

Difficult as it is to subject CAM to randomized controlled studies, academic medicine should encourage high quality research and grants should be allocated for that purpose. Implementation of this approach will lead to a better understanding of CAM by conventional medicine practitioners and hopefully to more cooperation with CAM providers. In parallel, a process of "academization" of CAM should be initiated by regulatory authorities by defining training requirements and licensure procedures.

In conclusion, it is our duty as medical practitioners to increase our understanding of and to teach the next generation of physicians about the various CAM modalities in order that they may demonstrate an educated approach to their patients' use of CAM, and encourage them to disclose information about the CAM treatments they are patronizing. We should also encourage active research into CAM practices in order to differentiate the methodologies which may be beneficial to our patients from those that have no value or may even cause harm.

"Sitting it out," as organized medicine in Israel has done to date, is no longer a viable option. The CAM procession is rolling on and our reluctance to face the issues squarely will ultimately be to our patients' detriment and to our own. The conflicting paradigms of conventional medicines and CAM need not discourage us. As Karl Popper once wrote: "The growth of knowledge depends entirely on the existence of disagreements" [24].

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