

Recent advances

Complementary medicine

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Given that many complementary medicine techniques are defined in terms of a static historical tradition, discussing recent advances in complementary medicine is almost a contradiction in terms. None the less, few acquainted with complementary medicine would deny that substantive shifts in its scientific base and organisational structure have occurred recently. These shifts might indicate that complementary medicine is becoming more integrated. Integration, as used here, means that similar clinical, scientific, and regulatory standards are being applied across all forms of health care. If a list was written of what patients care about (for example, the clinical relationship), what researchers feel is important (for example, control of bias), what clinicians hold critical (for example, clinical competence), or what matters to purchasers (for example, cost effectiveness) there would probably be no reference to the historically and politically contingent concepts of “conventional” and “complementary” medicine. Integration has obvious implications for the access to and availability of care. It also implies that clinicians agree on their respective roles so that patients feel that they are receiving care as part of a coordinated service. In this article I review a number of signs that complementary medicine is becoming increasingly integrated.

Methods

This review is largely a personal reflection on recent changes in complementary medicine. Research has been supplemented by email discussions with colleagues based in the United Kingdom. The major source of original research material was the *Cochrane Library*, an electronic database of randomised trials and systematic reviews.

Applied research

The quantity of applied health research on complementary medicine is growing rapidly, and the quality is improving. The number of randomised trials of complementary treatments has approximately doubled every five years,¹ and the *Cochrane Library* now includes nearly 50 systematic reviews of complementary medicine interventions.

Much of this evidence involves small numbers of patients and is of poor methodological quality; however, high quality systematic reviews of complementary medicine have been published recently which provide a reli-

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The quantity of applied research in complementary medicine is growing rapidly and the quality is improving

There is good evidence supporting the use of some complementary medicine treatments

Guidelines and consensus statements issued by conventional medical organisations have recommended some complementary medicine treatments

Complementary medicine is increasingly practised in conventional medical settings, particularly acupuncture for pain, and massage, music therapy, and relaxation techniques for mild anxiety and depression

Osteopaths and chiropractors recently became the first complementary medicine practitioners in the United Kingdom to be regulated

There is a more open attitude to complementary medicine among conventional health professionals; this is partly explained by the rise of evidence based medicine

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able basis for making healthcare decisions. For example, a Cochrane systematic review of St John's wort (*Hypericum perforatum*) for mild to moderate depression included 27 trials with a total of more than 2000 participants.² The review found that St John's wort was superior to placebo and equivalent to tricyclic antidepressants but had fewer adverse effects. Although not all questions have been answered, particularly those of safety,³ the review does provide a basis for making treatment decisions. Another Cochrane review of a botanical medicine examined the effects of Saw palmetto (*Serenoa repens*) on benign prostatic hyperplasia. Eighteen studies with a total sample size of nearly 3000 patients were included. Clear benefits were shown for urinary symptoms and peak urine flow.⁴ Other recent, high quality systematic reviews have found acupuncture to be effective for pain^{5,6} and nausea⁷ but not for helping smokers to quit.⁸



Ginkgo biloba

One consequence of the increase in the availability of high quality data is that guidelines and consensus statements published by conventional medical bodies have supported the value of complementary medicine. In the United Kingdom guidelines from the Royal College of General Practitioners recommend physiotherapy, chiropractic treatment, or osteopathy within six weeks of the onset of persistent uncomplicated back pain.⁹ The BMA recently published a report supporting the use of acupuncture.¹⁰ In the United States, the National Institutes of Health have issued consensus statements supporting the use of hypnosis for pain related to cancer and the use of acupuncture for pain and nausea.^{11 12} Acupuncture, hypnosis, and relaxation techniques are included in guidelines on the management of pain associated with cancer that have been published by the US National Comprehensive Cancer Network.¹³

These shifts highlight an improved awareness among researchers of the importance of complementary medicine and an improved awareness among complementary medicine practitioners of the importance of research. These changes have led to increased funding and the establishment of complementary medicine research units at sites of research excellence. Some of the ongoing research studies are shown in the box. In the United Kingdom, the NHS recently funded two trials



Fruit of Serenoa repens

of acupuncture for treating chronic pain. In Germany, a centre for research into complementary medicine at the Technische Universität in Munich has produced a series of important systematic reviews.^{2 5 14} And in the United States, a centre for research into complementary medicine at the National Institutes of Health has a \$68m (£45m) budget and supports a large number of trials and research centres. The United States also has a large number of units for research into complementary medicine that are based at conventional research institutions such as the University of Maryland, Columbia University in New York, Harvard University in Massachusetts, and Memorial Sloan-Kettering Cancer Center in New York. These institutions provide the sort of intellectual and practical infrastructure essential for high quality research; this support has long been missing in complementary medicine. For example, a phase I trial of a botanical cancer treatment planned at Memorial Sloan-Kettering has been developed by a team that includes experts in complementary medicine research, a statistician who is an expert in developing novel designs for phase I studies, an expert in assessing quality of life, and senior oncologists with extensive experience in clinical research. The researchers have access to a large number of patients who are receiving the highest standard of care. These basic prerequisites for conducting high quality research into complementary medicine would not have been in place several years ago.

Clinical practice

Complementary medicine and conventional medicine have traditionally been provided in entirely separate settings. Recently, however, there has been a greater integration between the two, with both often provided at the same site. Currently about 40% of general practices in the United Kingdom offer access to complementary medicine.¹⁵ Chiropractic and osteopathy are two of the treatments that are most commonly provided, particularly for low back pain.¹⁶ Some practices offer relaxation classes (to improve well-being)¹⁷ or yoga (to produce feelings of vitality).¹⁸ These treatments are generally aimed at patients with mild anxiety or depression or chronic physical complaints for which further treatment options are limited. Massage, which has been shown to reduce scores on scales measuring anxiety¹⁹ and to improve sleep,²⁰ is offered in most hospices in the United Kingdom. Acupuncture is widely provided in pain and rheumatology clinics, a development spurred by increasing evidence that acupuncture is of benefit for chronic pain.^{5 21 22} Music therapy is a popular complementary treatment in hospitals in the United States, where randomised trials have supported its use for reducing pain and anxiety in the acute setting.^{23 24}

At the Integrative Medicine Service unit at Memorial Sloan-Kettering, practitioners of massage, music therapy, and acupuncture work on the inpatient wards; patients can be referred by a doctor, nurse, or social worker. These treatments are also offered at an outpatient site along with relaxation, yoga, and t'ai chi classes. It is not unusual to see a patient with severe pain having a foot massage while receiving intravenous methadone or to hear a guitar being played in the room of an anxious and lonely patient.

Although one stimulus for increasing integration has been the increase in research evidence, the factors which affect the use of complementary medicine within conventional settings are complex.¹⁵ Issues such as public pressure, economics, or the attitudes of key personnel often play an important part in determining whether integration occurs.

Training, education, and regulation

There have long been inconsistent standards of training and regulation in complementary medicine. Patients visiting practitioners of complementary medicine have had no guarantees of the competence of a practitioner. The first statutory registration of practitioners of complementary medicine is occurring now and therefore represents a welcome step in the regulation of complementary medicine. A General Osteopathic Council and a General Chiropractic Council have been established and have opened statutory registers in the United Kingdom. After a transitional period it will be an offence for anyone in the United Kingdom to claim to be an osteopath or chiropractor unless they are registered.

Training in complementary medicine is increasingly being provided in academic settings. For example, in the United Kingdom the London School of Acupuncture, which used to provide private tuition, has now joined the University of Westminster to offer a BA degree in acupuncture. Similarly, herbal medicine courses are offered at the University of Middlesex, and postgraduate studies in complementary medicine are available at the University of Exeter. Although academic training in complementary medicine is a new discipline and there are some teething problems, the shift to the university setting provides the opportunity for students of complementary medicine to interact with other students in an environment of critical analysis and debate.

Courses on complementary medicine are also being offered to medical students. These tend to be offered as an option on modular courses and generally provide an academic introduction rather than specific clinical skills. The proportion of medical schools in the United Kingdom offering such courses rose from 10% to 40% between 1995 and 1997.²⁵ A large number of US medical schools have elective classes and seminars on complementary medicine.²⁶

Attitudes

Complementary medicine and conventional medicine have not always coexisted easily. Each has attacked the other. Practitioners of conventional medicine have used legal sanctions to harass and even jail practitioners of complementary medicine.²⁷ Recently there has been a change in the attitude of those practising conventional medicine towards complementary medicine. This is perhaps best characterised by two articles on complementary medicine published in the *BMJ* in 1980 and 1999.^{28, 29} The first editorial was entitled "The flight from science." It suggested that some aspects of chiropractic "ought to be as extinct as divination of the future by examination of a bird's entrails"; acupuncturists' beliefs were described as irrational.²⁸ In contrast, the Editor's choice that was published alongside a specially commissioned series of articles on complemen-

tary medicine, described "a new dawn" and stated that complementary medicine is not "unproved"; the article continued: "increasing evidence shows the effectiveness of some treatments in some conditions."²⁹ A key element in this change has been the rise of evidence based medicine, which emphasises empirical data over theory. Accordingly, what matters is whether a treatment does more good than harm and not how it happens to be categorised.^{30, 31}

Conclusion

Given the increasing amount of data available in some areas of complementary medicine, research is shifting from efficacy trials to more pragmatic studies.³² Acupuncture is a good example of this changing agenda. In a classic trial performed in the mid-80s, patients with migraines referred to secondary care were randomly allocated to treatment with acupuncture or a sham technique to see whether acupuncture was more effective than placebo in relieving pain.³³ In a trial now in progress patients with chronic headaches seen in primary care are randomly allocated to the usual care offered by a general practitioner or to the general practitioner's care plus acupuncture; this trial was designed to answer the practical question of whether a general practitioner should refer patients with chronic headache to an acupuncturist.³⁴

As it becomes accepted that some complementary medicine can work, the question arises "why does it work?" The popularity of complementary medicine, and at least part of its effectiveness, has been ascribed to the therapeutic relationship. Accordingly, there have been calls for research into the clinical effects of "caring, communication ... patient empowerment [and the] meaning [of illness]."³⁵ Another area for further basic research is botanical medicines. This area raises important questions about the current emphasis on single compounds in pharmacological treatment. For example, why is St John's wort effective in treating depression? Is its effectiveness due to a single active ingredient, or is there an additive or synergistic interaction between some of its many constituent compounds? Can we design a drug based on St John's wort which works better than the raw botanical?

Discussing St John's wort—recently shown to reduce concentrations of the HIV-1 protease inhibitor indinavir³—raises the issue of safety. As more people use complementary medicine and it comes under

Ongoing research studies

Comparative effectiveness of St John's Wort, sertraline, and placebo in depression (Duke University, North Carolina, United States)

Acupuncture versus sham acupuncture versus educational intervention (control) for patients with osteoarthritis of the knee who are on standard drug treatment (University of Maryland, United States)

Effectiveness and cost effectiveness of acupuncture versus no additional treatment for headache (Royal London Homoeopathic Hospital, United Kingdom)

Systematic review of spinal manipulation for back pain (Cochrane Collaboration review)

Ginkgo biloba versus placebo for prevention of dementia in older people (University of Pittsburgh, Pennsylvania, USA)

Sources of additional information

Books

Zollman C, Vickers A. *ABC of complementary medicine*. London: BMJ Publishing, 2000.

Websites

Acupuncture

- British Medical Acupuncture Society at www.medical-acupuncture.co.uk
- British Acupuncture Council at www.acupuncture.org.uk/
- International acupuncture associations at directory.google.com/Top/Health/Alternative/Acupuncture_and_Chinese_Medicine/Professional_Organizations/

Chiropractic

- UK Chiropractic Website at www.chiropractic.org.uk/
- International chiropractic organisations at directory.google.com/Top/Health/Alternative/Chiropractic/Organizations_and_Associations/

Cochrane resources

- Cochrane Collaboration and the *Cochrane Library* at www.cochrane.org

Herbal medicine

- Phytonet at www.exeter.ac.uk/phytonet/
- American Botanical Council at www.herbalgram.org/

Homeopathy

- Homeopathic Trust at www.trusthomeopathy.org/
- National Center for Homeopathy in the US at www.homeopathic.org/

Hypnosis

- British Society of Medical and Dental Hypnosis at www.bsmdh.org/
- US Society for Clinical and Experimental Hypnosis at sunsite.utk.edu/~ijceh/scehframe.htm

Massage

- American Massage Therapy Association at www.amtamassage.org/

Osteopathy

- Osteopathic Information Service available at www.osteopathy.org.uk/
- US osteopathic medicine at the Student Doctor Network at osteopathic.com/

Universities

- University of Exeter—Centre for Complementary Health Studies at www.ex.ac.uk/chs and Department of Complementary Medicine at www.ex.ac.uk/pgms/comphome.htm
- University of Maryland—Complementary Medicine Program at www.compmed.ummc.umaryland.edu/ and the School of Medicine Cochrane Collaboration field on complementary medicine at www.compmed.ummc.umaryland.edu/compmed/cochrane/cochranefr.htm

US National Institutes of Health

- National Center for Complementary and Alternative Medicine at nccam.nih.gov

Memorial Sloan-Kettering Cancer Center, New York, United States

- Integrative Medicine Service at www.mskcc.org/patients_n_public/patient_care_services/outpatient_services_and_facilities/integrative_medicine_service/index.html

Information on unusual complementary treatments

- Quackwatch at www.quackwatch.com

increasing scrutiny, safety issues are likely to cause serious concerns because systematic means of gathering, collating, and disseminating reports of adverse effects are not fully developed.

The use of St John's wort illustrates another key question in complementary medicine: how much evidence is enough evidence? And regardless of how much evidence is published, will any complementary medicine become standard, first line treatment? In

patients with mild or moderate depression, St John's wort has been shown to be more effective than placebo,² to have similar efficacy to and fewer adverse effects than tricyclic antidepressants,² and to have possibly greater efficacy and certainly fewer adverse effects than fluoxetine.³⁶ Yet St John's wort is not licensed in the United Kingdom and is not widely prescribed. Is it plausible to think that it ever will be?

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