Dynamic Chiropractic

HEALTH & WELLNESS / LIFESTYLE

Obstacles and Barriers to CAM Research

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Editor's note: In the last issue, we published "Drs. Meeker and Rosner Testify before White House Commission on CAM Policy." We were able to include much of what Dr. Meeker spoke on, but not on Dr. Rosner's presentation, as he was out of the country. Here now is Dr. Rosner's testimony before the White House Commission on Complementary and Alternative Medicine Policy, October 5-6, 2000.

Until 25 years ago, chiropractic research was vastly underdeveloped and appeared to some as an oxymoron. In 1975, a conference at the NINDS/NIH concluded: "There are little scientific data or significance to evaluate this [chiropractic's] clinical approach to health and to the treatment of disease."[1] From that time onward, both clinical and basic research have advanced to the point at which [i] over 40 randomized clinical trials comparing spinal manipulation with other treatments in the management of back pain have been published in the scientific literature,[2,3] [ii] meta-analysis and systematic reviews attesting to the support of spinal manipulation in the management of back pain[4,5] have also appeared, and [iii] multidisciplinary panels representing the governments of the United States,[6] Canada,[7] Great Britain,[8] Sweden,[9] Denmark,[10] Australia,[11] and New Zealand[12] have expressed similar recognition of the robust evidence base in support of spinal manipulation for managing low back conditions.

Barriers

The efforts to launch and develop a National Center for Complementary and Alternative Medicine within the framework of the NIH are indeed admirable, taking the Center from a humble $2M annual budget in 1991 to one that approaches $70M today. This has taken place despite the comments of highly visible and influential individuals within the medical community to discredit alternative medicine in virtually any shape or form, a topic that I shall return to momentarily. Following are what I believe to be the most significant barriers to research efforts in alternative medicine, the barriers having either remained in place or only recently having been removed.

1. Collaborative Arrangements

Dating from the first RFA in March 1993, the Office of Alternative Medicine required that researchers in alternative medicine collaborate with people from an orthodox medical background, described as "individuals familiar with conventional research methodologies."[13] The implication was that researchers in alternative medicine, having fewer resources and shorter bibliographies than their allopathic counterparts to begin with, were somehow less qualified to pursue research questions of any kind. With the lack of exposure to either the theory or practice of alternative medicine modalities, potential allopathic medical collaborators had to overcome gaps in knowledge and professional prejudices to become allied with alternative medical researchers, clearly delaying their efforts to launch research programs fundable from a federal point of view.

Furthermore, directing grant funding and their associated indirect costs toward allopathic medical centers, rather than specific institutions in alternative medicine, served to delay the building of the research infrastructure specifically within alternative medicine. NCCAM's establishment of specific research centers (including the chiropractic center at Palmer University) and its recent provision of RO1 programs (in which individual researchers in CAM may step forward as the PI on a fundable grant application) are major steps in overcoming this obstacle.

2. Domestic Institutions

A number of major milestones of research that have significantly lowered barriers to the practice and research of chiropratic have been accomplished abroad. The low-back studies of Meade (Great Britain),[14,15] the cervicogenic and tension headache studies of Nilsson (Denmark),[16,17] the first randomized clinical trial addressing colic - possibl a nonmusculoskeletal condition in infants - (Denmark),[18] and numerous asthma case reports[19] and a pilot for a randomized clinical trial from Australia[20] to lay the foundation for future clinical trials directed at this condition are but a few outstanding examples. Thus, the requirement of many past federal programs restricting grants to domestic institutions only represents a major impediment to the accomplishments and potential of research in alternative medicine, which recognizes no national boundaries and which has clearly benefited from the additional resources available beyond American borders.

3. Composition and Proceedings of Institutional Review Boards

Undoubtedly institutional review boards are an indispensable component of ensuring patient safety and knowledgability in a clinical trial.[21] From this writer's firsthand experience, however, there have been instances in which a proposed randomized clinical trial within a major medical center has been rejected out-of-hand from what was probably the harboring of anti-chiropractic sentiments by the head of the IRB, who among other transgressions referred to this treatment alternative as "chiropracty." While implementing panels to monitor the behavior of IRBs may appear excessive, the issue does bear further scrutiny in the event that viable and safe alternatives in patients' interest fall victim to prejudice within an IRB.

4. Composition of Study Sections

For many of the same reasons as in the previous section, there must be an equitable number of individuals within each study section of a grant proposal who are familiar with and sensitive to the conduct of the therapeutic regimens to be tested. Common sense dictates that an eloquent and sympathetic presentation of the therapies to be studied be made to the study section as a whole. This writer recalls with dismay an egregious violation of this principle in the first round of alternative medicine applications reviewed by the OAM in 1993.Here, only a single member among the eight 17-member study sections drafted by the NIH was a chiropractor, who was unfortunately undistinguished as a researcher, and lacked the necessary background to provide constructive critiques of grant proposals in this field. Adding insult to injury was the fact that the OAM had been provided with the names of over 15 highly qualified and accomplished chiropractic researchers. Completing this sorry state of affairs was the fact that these sections were charged with reviewing over 400 applications, nearly half of which pertained to chiropractic. Providing properly balanced and enlightened study sections reviewing grant applications is clearly an absolute requisite for reducing significant barriers to the conduct of CAM research.

5. Publication Biases and Quotas

Examples can be introduced of editorial biases and quotas, which have prevented the most robust of chiropractic research from reaching necessary audiences. For instance, headache study by Boline,[22] rated the highest in quality by two independently systematic literature reviews,[23,24] was denied publication at the *New England Journal of Medicine, Headache,* and *Cephalalgia* before finally appearing in the *Journal of Manipulative and Physiological Therapeutics* two years later. Examples exist in which editorial comments to the principal authors of studies have clearly indicated that obtaining negative results for spinal manipulation was the criterion for acceptability for publication.[25,26] Thus it is with dismay that this writer finds two inferior and widely-publicized studies in chiropractic which did get published in the *New England Journal of Medicine,*[27,28] extensive rebuttals of which have been published elsehwere.[29-32] Statements by two previous editors of the *New England Journal of Medicine* offer little encouragement, as they have been patently biased with little qualification in their negative assessments of alternative medicine.[33,34]

Publication quotas likewise impede the dissemination, and therefore the incentive, to perform CAM research. The *American Journal of Public Health,* for example, allows the publication of but one chiropractic study per year based upon current membership. While subsidization of publication costs through membership is entirely appropriate, restricting access of information from a modality which has been experienced by [37] percent of the American population at some point in their lives[35] appears arbitrary and draconian.

6. Distortion of Research Results in the Press and in the Journals

The crippling effects of bias and editorial policy of certain medical journals just discussed has ramifications in what is actually stated in papers and subsequently in the lay press. One study published in the *New England Journal of Medicine,* for instance, stated a conclusion that was far beyond anything supported by the data. Specifically, the study discouraged the routine referral of patients to chiropractic: "Given the limited benefits and high costs, it seems unwise to refer patients with low back pain for chiropractic or McKenzie therapy."[27] As egregiously out-of-bounds as a statement such as this is for a scientific journal, the lay press (to which the *NEJM* reportedly controls half of the health news we receive) only made matters worse. Such "scare" headlines as "Study Targets Worth of Chiropractic,"[36] and "Chiropractic Care Blasted in Two Studies"[37] only poisoned the atmosphere, inhibiting further research efforts and inducing third party payors to deny reimbursements for chiropractic services in which the outcomes have yet to be definitively disproved. News releases such as these need to be actively discouraged, and the public needs to be further enlightened as to the research and potential of multiple modes of alternative therapy - not just chiropractic.

7. Mainstream vs. Alternative Status of Chiropractic

Primarily due to the aforementioned research accomplishments regarding spinal manipulation and low-back pain,[2-7,14,15] chiropractic intervention has often been regarded as "mainstream" rather than alternative in the management of low-back pain,[8-12] and possibly at least for some types of headache as

well.[16,17,22-24] However, in the treatment of asthma;[19,20,28,32] scoliosis;[38,39] otitis media;[40-42] infantile colic;[18,43] enuresis;[44] repetitive stress disorders;[45-48] dysmenorrhea[49-51] and premenstrual syndrome;[52-54] chronic pelvic pain;[55] GI dysfunctions;[56-58] and attention deficit disorder/hyperactivity,[59] chiropractic must be regarded as an alternative therapeutic approach. As a hybrid, chiropractic should be regarded as having important attributes of alternative medicine. Accordingly, it should not be dismissed as only a mainstream specialty ineligible for funding from sources that are supporting research in alternative medicine.

8. The Origins of Mainstream Medicine

As suggested in the preamble to the five-year strategic plan of NCCAM, "As CAM practices once considered unorthodox...are proven safe and effective by rigorous scientific investigation, they become part of mainstream health care." This is certainly the way one hopes to transform good research into practice and clearly represents the mission of both NCCAM and our Foundation. However, since only 15 percent of medical procedures have been reported to be supported by any documentation[60] and only one percent is considered to be scientifically sound,[61] it is presumptuous to assume that what is currently accepted in standard medical procedures is intrinsically robust from a scientific point of view. Have large-scale clinical trials supported the use, of every variation of catheter used in angioplasty, for instance? One need only consult the Merck index of 100 years ago to realize that the following treatments -now woefully inadequate, outdated, and even dangerous -were unflinchingly accepted into the mainstream as de rigeur[62] within at least some of our lifetimes:

1. formaldehyde for the common cold;
2. arsenic or ammonia for baldness;
3. opium and morphine for typhoid fever;
4. blood-letting and chloroform for streptococcal infections; and
5. strychnine, ice and lemon juice for diphtheria.

Thus, it is my belief that the idealism expressed regarding the origins of mainstream practices (in medicine or elsewhere) has to be tempered with realism. It is simply unreasonable to expect that every procedure and variation in health care delivery will be supported by a randomized clinical trial.

9. Intervention Paradigms

Perhaps most flagrantly illustrated by both studies published in the *New England Journal of Medicine,*[27,28] chiropractic must never be confused with merely high-velocity thrusting of the spine. Such is to reduce it to a one-dimensional specialty of cracking joints. Indeed, low-force contact

procedures that have been incorrectly classified as placebos (shams)[28] have actually been shown to produce major improvements in both lung functional tests and patient symptoms with regard to asthma.[63]

According to the preamble of the charter for the Council of Chiropractic Education, chiropractors are fully trained as a portal of entry primary care health service capable of complete diagnosis. The Council of Chiropractic Education has accrediting status with the U.S. Department of Education (since 1974) and the Council on Postsecondary Accreditation (since 1976). Among the therapeutic regimens for which chiropractors are licensed to administer are the use of hot and cold packs, electrical stimulation, soft tissue procedures (including trigger point therapy), and nutritional counseling.[64]

Building upon preliminary studies appearing just this year,[65,66] more attention needs to be paid to long-term outcomes and supportive care. These attributes may differ somewhat from allopathic medicine's historical approach to disease management. The point is to emphasize the effects of interventions over the long term, which have the potential of forestalling or preventing far more invasive and expensive procedures which are substantially riskier for the patient. In terms of overall cost control and offering the possibility of reducing both the costs and morbidity of medication error-related deaths,[67,68] the implications of earlier intervention by alternative medical procedures are enormous.

10. The role of the RCT

There is no doubt that the RCT remains an important piece of the mosaic of evidence that needs to be assembled to substantiate a clinical procedure. However, it is certainly not the only piece, and in many instances in my experience, it has been overrated:

1. In a highly publicized randomized clinical trial regarding the use of chiropractic in managing asthma,[28] both the use of a highly invasive sham procedure (an inappropriate placebo) and the possibility of small sample sizes obscuring possible effects by a Type II error have led to misleading conclusions, let alone interpretation by the lay press.[36,37]

2. Another highly visible clinical trial comparing three interventions in the management of acute low back pain[27] suffered from poor design[30] and inappropriate statistical procedures[31] Worse, it implied that a single intervention represented chiropractic care such that its clinical relevance was highly questionable. Indeed, the Royal College of General Practitioners in a very recent systematic review of the literature designed to update the CSAG Guidelines of the United Kingdom8 has concluded that this trial neither adds nor detracts from the evidence base regarding appropriate interventions for low back pain.[69]

3. A meta-analysis has shown that contrasting interpretations can be obtained, depending upon which of [25] scales used to distinguish between high-quality and low-quality trials is actually employed.[70]

4. A review of clinical trials comparing two antifungal agents has indicated that the apparent advantages of one of the instruments could have been obtained by manipulations of the design

of most of the trials, in which the competing agent was inappropriately administered.[71]

5. The weight of evidence produced by clinical trials may be overcalculated due to the fact that the clinical trials are overrepresented as duplicate "sausage" publications by the same authors.[72-75]

6. Methdological scores attached to clinical trials create a misleading profile of high-quality and low-quality studies if they place too much emphasis upon sham procedures - which we already know will seriously com-promise controlled studies involving physical methods such as spinal manipulation if they are not true placebos. In other instances, the mere utterance of such terms as "blinded" or "randomized" in the title of the paper cited may be sufficient to glean points in the rating of clinical trials - even though such terms are never defined or qualified. The proper remedy in this instance would be to demote the trial ratings if such terms are inappropriately used.[70]

The point to realize here is that RCTs are subject to misinterpretation and outright abuse. Their generalization from a fastidious, defined laboratory setting is problematical. It is sometimes forgotten that the source of randomized clinical trials remains the sound, well-documented observations in the clinical setting. This has led epidemiologist than David Sackett to conclude that there are essentially two pillars of sound clinical evidence, only one of which is experimentally derived from the RCT:[76]

"External clinical evidence can inform, but can never replace individual clinical expertise, and it is this expertise that decides whether the external evidence applies to the individual patient at all and, if so, how it should be integrated into a clinical decision."

In light of these many arguments, I would maintain that the WHCCAMP should place far greater emphasis upon cohort studies and case series in its research goals rather than assume categorically that they provide inferior guidance to clinical decision-making than RCTs. It should be quite clear from this discussion that a well-crafted cohort or case series is far more informative than a flawed or corrupted RCT.

Solutions

I would recommend that the WHCCAMP pursue the following:

1. Encourage all qualified researchers in alternative medicine to apply for federal and private grant support, taking into account refusals of attempted publication in peer-reviewed medical journals.

2. Encourage researchers from around the world, rather than only from American soil, to apply for such support;

3. Institute an appeals process if a research team believes that an institutional review board has turned down a research proposal unfairly;

4. Ensure that all study sections include a sufficient number of individuals that are familiar with and sensitive to the therapeutic regimens described within the proposal under review;

5. Frame and encourage legislation that encourages better communication of researchers and

practioners of alternative medicine with the media, limiting the contacts with those journals found to harbor unjustifiable biases against alternative medical procedures.

6. Ensure that chiropractic is recognized as both a mainstream and an alternative intervention, depending upon the condition for which therapy is indicated. Accordingly, ensure that chiropractic is excluded from neither category in terms of grant eligibility and collaboration.

7. Encourage research directed at long-term outcomes and supportive care, areas that have commonly been neglected in allopathic medical care and which offer the possibility of low cost, preventive health management.

8. Ensure that chiropractic is not limited to referral-only specialty care limited to the back, based upon current accreditation, licensure, and research. In this regard, it is to be appreciated as a direct portal of entry for patient care-appreciating the ability of chiropractors to diagnose and apply treatments that are broader in scope than merely high-velocity thrusts.

9. Appreciate the limitations of randomized clinical trials, admitting well-designed and well-executed cohort and case studies into the evidence base supporting a given intervention.

10. Frame and encourage legislation that does not permit third-party payers to restrict reimbursements beyond the scope of practice currently stipulated by licensure laws within the states.

11. Coordinate activities with NCCAM and avoid duplication of efforts wherever possible.

12. Encourage private sources to invest in all types of alternative and mainstream medical research with adequate oversight. This would have the twofold benefit of offsetting the pharmaceutical industry's virtual monopolizing of the private support of medical research, as well as offering a variety of measures to reduce the chances compromising the quality of the research.

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