A Call for Evidence-Based Medicine: Evolving Standards and Practices for JAOA Readers and Authors Alike

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The theme for the August 2007 issue of JAOA—The Journal of the American Osteopathic Association is evidence-based medicine (EBM). We are hopeful that it marks a milepost in several respects.

As a starting point, physicians have several reasons to care about EBM. Most importantly, as clinicians, we want to practice the best medicine possible: we want to establish correct diagnoses, implement appropriate treatment and prevention, and we want to avoid (or at least minimize) the chance for harm. And, plenty of people are watching, people or groups who expect this of us and will hold us to the highest standards—our patients, our hospitals, third-party payors, and health policy decision-makers.

Part of the challenge arises from the explosion in biomedical publishing: perhaps as many as 2 million articles are published each year. Although keeping up with primary research is now officially impossible, the reality is that we physicians haven’t been able to keep up with the current research for at least the last 30 years. Instead, we relied on narrative reviews, state-of-the-art papers, expert opinion, and consensus statements to give us the semblance of staying current. We now recognize this process was flawed, haphazard, incomplete—and, at times, reflected the significant bias of the authors.

What the articles in this EBM theme issue convey is that we need the same scientific rigor in the reading of medical literature as is expected in primary research. In other words, EBM relies on secondary research—research where the objects of study are the research studies themselves: single reports (eg, randomized controlled trials [RCTs]), systematic reviews, meta-analyses, and clinical practice guidelines.

Systematic reviews are scientific investigations themselves. They require preplanned methods and their “subjects” are published and unpublished studies. In this type of scholarly research, results of multiple primary investigations are synthesized with methods designed to limit bias and random error. This discipline requires a comprehensive search of all potentially relevant articles with defined criteria for the selection of articles for inclusion. When the results of primary studies are summarized but not statistically combined, the resulting study may be called a systematic review. A meta-analysis is a quantitative review that uses statistical methods to combine and analyze the results of two or more studies. Practice guidelines rooted in EBM are integrative reports based on systematic reviews.

The team of authors who collaborated to produce this EBM theme issue show how such sources become the appropriate evidence base for clinical decisions on testing and diagnosis, treatment choices, and the possibility of causing harm. The writing style of our authors is deceptively simple. I encourage readers to resist the temptation to skim the first few lines of these pieces and assume the information is already in their “personal databases.” Each article is brief, but it sets the stage for a more complete incorporation of EBM into daily practice.

The editors of the JAOA have chosen to mark the occasion of this EBM theme issue with two announcements. The first is that systematic reviews and meta-analyses will receive a very high priority for publication. This shift will place systematic reviews and meta-analyses on a level equivalent to that of well-designed, well-conducted, and well-reported RCTs, which continue to have the highest priority for publication in the JAOA.

Second, on page 326 of this issue, we issue a call to authors for manuscripts on two topics of high relevance to the osteopathic medical profession. Specifically, we are looking for systematic reviews or meta-analyses that address:

- visceral-somatic interactions
- the connection of body, mind, and spirit

Both topics should be addressed in a manner that expands the current thinking and practice of the medical community—and specifically advances key osteopathic tenets.

A medical journal is only as good as its editors, authors, and peer reviewers. Therefore, we will be asking our peer reviewers to fine-tune their skills in the critical evaluation of RCTs, systematic reviews, and meta-analyses of RCTs or epidemiologic observational studies in accord with the major medical groups that have adopted stricter standards and guidelines for the writing and evaluation of these types of reports.

This emphasis on scientific literacy has important implications for osteopathic undergraduate and postgraduate medical education. After all, relatively
few of our students aim to become full-time research scientists. Although the requirement that our residents complete a scientific study during their training is laudable, surely our primary emphasis should be on scientific literacy. One benefit of EBM is that it actually requires the day-to-day application of secondary research.

One area where we might implement this change is in resident journal clubs. Too often, such meetings are sponsored by the pharmaceutical industry—an open invitation to bias—and participants are frequently diverted by the setting (eg, restaurant, entertainment venue).

Ten years ago, while assisting in guideline development for the Agency for Healthcare Policy and Research (now known as the Agency for Healthcare Research and Quality), I learned the rigorous technique of article abstraction for systematic reviews. In the cardiology fellowship program at Oakwood Southshore Medical Center in Trenton, Mich, we have adapted this technique into a form that we use for our journal club. I believe it has led to a significant upgrade in the quality of our literature reviews.

The osteopathic medical profession needs a dedicated effort to develop research to test mechanisms that may be involved in osteopathic manipulative treatment, to define the effectiveness of osteopathic manipulative medicine, and to define the unique contributions that our profession can make to the public health issues of our time. In fact, we need to work overtime on this, to make up for decades in which the bulk of our efforts were concentrated on clinical service, obtaining practice rights, and improving the profession’s standing.

We encourage osteopathic medical researchers to incorporate these rigorous standards for manuscript preparation. In addition, we hope that many of them will want to publish in the JAOA.

Further, it also our hope that all osteopathic clinicians—whether they conduct primary research or not—will implement the techniques essential to the practice of EBM in their daily practice. Evidence-based medicine is not only a form of secondary research, it is the optimal way to maximize the quality of care that we deliver to patients.

References

Editor’s Note: To advance the scholarly evolution of osteopathic medicine, JAOA—The Journal of the American Osteopathic Association invites readers to submit systematic reviews or meta-analyses on (1) visceral-somatic interactions, and (2) connections of the body, mind, and spirit, for publication in a future JAOA theme issue.

Contributions should exemplify the principles outlined in the February 2002 JAOA article, “Proposed tenets of osteopathic medicine and principles for patient care” (2002;102:63-65). All manuscripts should be submitted for peer review by February 2008 and should conform to the requirements outlined in “Information for Contributors,” which is printed on pages 366-368 of this issue.