

## THE EDITOR'S CORNER

### The Weight of the Evidence

Since the mid-'90s, evidence-based decision making and its offshoots, evidence-based medicine and evidence-based dentistry, have attracted an almost cultlike following in the clinical sciences. As noted by Williams and Garner in their excellent paper, "The case against 'the evidence': A different perspective on evidence-based medicine", "Clinical effectiveness, evidence-based medicine (EBM) and related terms were the politically correct medical slogans of the 1990s. For many, they are the 'buzz-words' conveying a modern progressive approach and in some circles it is unwise to express skepticism."<sup>1</sup> The authors go on to say, "Although the ideas are not new and the basic assumptions of EBM are sound, there are major reservations about how its tenets are being promoted. The only evidence deemed acceptable in decisions about treatment is that derived from randomized controlled trials (RCTs)." The current tone in academic dentistry indicates that it is one of those "circles" to which the authors refer. At the risk of being labeled "unwise", however, I have to confess some skepticism about a blind-faith acceptance of the "evidence-based" dogma.

Over the last semester, I have been supervising a master's thesis based on a meta-analysis of modalities used for Class II correction. For those not familiar with this evidence-based research design, meta-analysis is defined as "a set of statistical procedures designed to accumulate experimental and correlational results across independent studies that address a related set of research questions. Unlike traditional research methods, meta-analysis uses the summary statistics from individual studies as the data points."<sup>2</sup> Basically, meta-analysis involves conducting a literature search for all acceptable papers published on a given subject—such as Class II correction—then pooling the statistical results of those studies into one big data set for further statistical analysis. Perhaps the most important thing I have learned from supervising this thesis is that very few acceptable RCTs have been conducted in clinical orthodontics. If, as EBM dic-

tates, only the information gathered from RCTs is scientifically valid, then almost everything orthodontists have learned since our specialty training is invalid. But when I look at the extraordinarily high-quality cases presented at Angle Society meetings and ABO displays, it seems obvious to me that superb clinical results are at least attainable. In fact, excellent orthodontics was practiced for more than 100 years before the advent of EBM.

Williams and Garner write, "Evidence deemed acceptable by the EBM movement as that on which treatment must be based is essentially information derived from RCTs or meta-analyses. This narrow approach diminishes consideration of other types of evidence available from naturalistic enquiry, case material and experiential sources and, for some doctors, is too blinkered a view." I firmly agree that the restrictive philosophy of EBM purists would deny us the benefits of many valid sources of knowledge and clinical experience.

One such source is JCO's "Roundtable" format. Over the years, these discussions have presented a wide variety of views on topics ranging from "Reminiscences of the '30s" and "Ethics in Orthodontics" to "Finishing and Retention" and "Computers in Orthodontics". Experts such as Robert Ricketts, Thomas Creekmore, Donald Tuverson, Wick Alexander, Warren Hamula, and a veritable constellation of other luminaries have presented diverse and insightful answers to practical questions posed by practicing orthodontists. I can't think of any other format from which, over the last 25 years, I have learned more. It was an honor for me when I was asked to moderate one of the JCO roundtables in 1992. Considering all that, I'm surprised every time someone criticizes them as "anecdotal" and not "evidence-based". So what?

In this and our previous issue, Gene Gottlieb moderates a panel of orthodontists, selected from among JCO readers across the country, on questions that have haunted me for years regarding early treatment—including serial extraction, crossbite correction, timing of treatment, and growth modification. Although these outstanding

clinicians refer to various studies, they don't feel obligated to base their opinions strictly on RCTs. Do I feel that the information they have provided is invalid? Quite the contrary. Many of the important clinical questions in orthodontics have yet to be adequately addressed by RCTs. But to quote Williams and Garner again, "the absence of evidence of effectiveness is not the same as absence of effectiveness. Not all therapies are studied to the same extent." If a treatment modality has not been studied by RCTs, is there no evidence regarding its effectiveness? I would suggest that clinical experience and the resultant expertise constitute a brand of evidence just as valid as any RCT.

In 1997, I was interviewed by Dr. Gottlieb on the subject of research design and statistics (wearing another hat, I am a professor of statistics and research design in USC's Department of Educational Psychology and Technology). One of Gene's first questions to me was, "Is the first test of a journal paper a commonsense approach to the study design?" My response then was the same as it would be today: "Of course." The orthodontists who participate in our roundtables bring us the highest level of valid clinical evidence: expertise based on genuine experience. Their findings easily pass the test of common sense, and I highly commend them to our readers.

RGK

#### REFERENCES

1. Williams, D.D.R. and Garner, J.: The case against "the evidence": A different perspective on evidence-based medicine, *Br. J. Psych.* 180:8-12, 2002.
2. Lyons, L.C.: *Meta-Analysis: Methods of Accumulating Results Across Research Domains*, <http://www.lyonsmorris.com/MetaA/index.htm>, Manassas, VA, December 1997.

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