

## Book Review

### Evidence-based dentistry: an introduction

Hackshaw AK, Paul EA and Davenport ES. 2006 Blackwell Munksgaard, Copenhagen, ISBN-13: 978-1-4051-2496-6 (pbk.:alk. paper), \$27.50

This text presents the fundamentals of critically analyzing published reports of individual research studies. The presentation is admirable, and mastering the contents should prepare a reader to make reasoned assessments of the merits of research studies. However, this is all that the text accomplishes. Despite the promise implied by its title, the text pays only lip service to the broader concepts of evidence-based dentistry (EBD). Perhaps most importantly, the text does not help the reader consider how to incorporate the skill of critical analysis of the scientific literature into the practice of EBD.

The text defines EBD as 'the integration and interpretation of the available current research evidence, combined with personal experience'. Practicing EBD is presented as a four-step process of: (1) defining the question; (2) searching for information; (3) interpreting the evidence; and (4) acting on the evidence. This is essentially the original evidence-based process as defined by Sackett. This process is essentially self-driven, and to date only a small proportion of dental practitioners have found the time, tenacity, and determination to take that drive.

Despite outlining the four-step EBD process in the first chapter, the content of the textbook focuses almost exclusively on the third step, interpreting the evidence. This text teaches both the general process and the finer points of critical analysis, and it does an excellent job at both. The approach in each of the subsequent seven chapters devoted to teaching critical analysis is to introduce and explain the concepts to be learned in the context of research reports taken from the dental literature. Each chapter is linked to such a report, and both the discussions in the text and exercises that close each chapter refer to these articles.

The chapters are easily readable; the authors have succeeded in presenting what can be extremely dry material in an interesting and highly satisfying manner. These discussions tend to be quite complete, as well. Anyone who has taught critical analysis has developed his or her own pet observations and caveats about the literature, and a surprising number of this reviewer's gems were encountered in the course of reading through the chapters. Another successful strategy employed in this text is the revisitation of topics subsequent to their introduction. A topic such as bias, which, after all, is at the heart of critical analysis, is not just presented once, but appears as a formal discussion topic in at least four chapters, each time building and elaborating on the previous presentations.

The instruction in critical analysis focuses on clinical studies, and, hence, much of the material takes an epidemiological perspective. The concepts of percentages and proportions are neatly integrated with initial discussions of the purpose of studies, generalization, and sampling. Distributions, and comparisons, and statistical testing are then discussed, leading to a discussion of how the effectiveness of treatments are determined, and, hence clinical trials. There follows a strong chapter on risk factors and disease causation, together with consideration of cohort and case-control studies. The subtleties of odds and risk and their respective ratios are succinctly presented. Following a chapter on interpretation of screening tests, the text revisits many previously introduced topics in a short but intense chapter on 'study design issues'.

The penultimate chapter 'reviewing all the evidence' is anomalous in that it tends to discount all that has come before. After describing the principal electronic databases, the text indicates that it is probably impractical to expect that individuals seeking specific information will have the time and expertise to conduct effective searches and then interpret the results. Alternatives to searching, reviewing, and interpreting, are described, including systematic reviews, evidence-based journals, and the Cochrane library. The chapter then presents a workmanlike summary of the principal features of systematic reviews, and even notes that

such an approach obviates readers' needs for the very skills discussed in the preceding chapters. The final chapter presents a summary of statistical concepts.

The only obvious oversight in the chapters describing what readers should know about, and look for in the research reports they read, is any reference to two of the most widely recognized assessment tools for these reports, the CONSORT criteria for RCTs and the QUOROM statement for systematic reviews. These omissions do little to weaken what is a very effective presentation. But at a broader level, what's missing from the text is any consideration or instruction as to how a practitioner should go about practicing EBD. As indicated by the authors' definition of EBD, they presume that practitioners will combine the evidence they glean from application of critical analysis with their practice experience. But the very real hazards of acting on personal experience in the absence of controlled observation, the 'in my hands' syndrome, are not addressed. Similarly, the text does little to prepare readers for the inevitable, and often discouraging realization that for so many questions

in dentistry, there is little or no evidence. After a few of these encounters, it is not unusual for even the most well-intentioned EBD initiate to abandon the EBD process as frustrating, and return to more mundane, biased sources of practice guidance. Finally, there is no instruction on appraising clinical guidelines, a skill that in the near future may become more critical than appraising individual scientific reports.

This is an excellent introductory text on critical appraisal of the scientific literature. It is written for those individuals with a dental background, and so would be appropriate as a text for predoctoral dental students and as either a refresher or an original exposure for dental practitioners. Those instructors and practitioners looking for a text that addresses the *practice* of EBD might consider this text as a pre-requisite.

J.D. Bader DDS MPH,  
Research Professor,  
UNC School of Dentistry,  
Chapel Hill, NC, USA  
e-mail: jim\_bader@unc.edu

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