Guide to Evidence-Based Physical Therapy Practice

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Dedication

To my teachers and colleagues, who inspire me to aim high and keep climbing;

To my students, who challenge me to become a world-class teacher;

To my family and friends, who love and encourage me even when they have taken a back seat to my computer.
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This book was created to address a challenge I face each time I teach evidence-based physical therapy practice to professional and post-professional students—that is, the need to order two texts to cover the information in my course. What I really wanted was one resource that provided sufficient information regarding research methods to allow the nonresearcher to understand and appraise studies, but that also was sized and structured for routine application of evidence to actual patients in clinical settings. This book attempts to marry the best elements of multiple texts into a single accessible guide to evidence-based physical therapy practice for students and clinicians alike.

The content is organized in four parts. Part I, Principles of Evidence-Based Physical Therapy Practice (EBPT), is comprised of three chapters that set the stage for the use of evidence in patient/client management. Chapter 1 addresses the history behind the evidence-based practice movement in health care, the various labels and definitions used to describe this approach to patient care, and the barriers to its application in real-time clinical practice. The material is placed in the context of the disablement model, as articulated in the American Physical Therapy Association's Guide to Physical Therapist Practice, 2nd ed. Chapter 2 examines the nature of evidence and its different forms, including the uses and limitations of hierarchies structured according to the quality of different study designs. A key point is that different research designs are suited to answering different types of clinical questions therapists may have about their patients/clients. Chapter 3 guides readers in the development of clinical questions regarding diagnosis, prognosis, interventions, and outcomes, and describes tools and strategies available to help locate studies of interest.

Part II, Elements of Evidence, reviews the different components of a research article (Chapters 4-7) with an emphasis on features that enhance or diminish a study's quality. The goal is not to teach readers how to become researchers; rather it is to increase their understanding of and confidence in interpreting what they are reading. Chapter 8 is devoted to a discussion of research validity—a key consideration in the evidence appraisal process. Chapter 9 is an attempt to demystify the most intimidating feature of research for many readers by illustrating the parallels between statistical tools and the instruments used in clinical practice.
Part III, Appraising the Evidence, provides the information needed to evaluate evidence about diagnostic tests and measures (Chapter 10), prognostic factors (Chapter 11), interventions (Chapter 12), and outcomes (Chapter 13). To my knowledge, the chapter on outcomes is unique to this textbook. Chapter 14 focuses on the appraisal of summaries of evidence in the form of systematic reviews and practice guidelines. An underlying principle of all of these chapters is that EBPT requires students and clinicians to work with the best available evidence that oftentimes is weakly designed. Physical therapy research still has a long way to go to address (with sophisticated methods) all of the questions we have about the wide variety of patients/clients with whom we work. Until such studies are completed, readers must determine for themselves whether the evidence they locate is useful despite its limitations.

Part IV, Evidence in Practice, discusses applications of evidence in practice from the patient/client’s point of view and presents illustrations using hypothetical patient/client scenarios. Chapter 15 considers the challenge of integrating evidence with patient/client values and preferences in the context of ethical decision making and patient-centered care. The influence of subjects’ values and preferences on study outcomes, and efforts to conduct trials that address these challenges, also are discussed. Chapter 16 ties all of the material together in demonstrations designed to help readers “see how it is done.”

Finally, the appendices provide additional information and resources to assist with critical appraisal of the evidence.

My intent throughout is to make this material user-friendly for students and clinicians who are new to the material, as well as for those who already have adopted an evidence-based approach to patient/client management. Terms are defined at the beginning of each chapter to help readers learn and remember the vocabulary of research and its applications. The exercises at the conclusion of each chapter are designed to reinforce the learning objectives stated at the beginning. The examples used to illustrate key concepts and points are specific to physical therapy and, where possible, are drawn directly from the published literature. Readers should recognize that inclusion of these works does not imply superior quality over other articles I may have selected. Similarly, these papers are not intended to reflect standards of practice to which readers should adhere. Readers must decide for themselves whether these studies are useful and relevant based on their own merits.

As readers will discover, I am but one of many authors who have tackled this subject over the years. In reality, this book was possible because of the fine work created by those who pioneered efforts to promote and commu-
nicate evidence-based medicine (practice) methods well before I ever heard those terms. David Sackett, MD, Gordon Guyatt, MD, Drummond Rennie, MD, and colleagues have written books and articles that are justifiably classics on this topic and that are cited frequently throughout this text. I have read and re-read their material and each time I do, I come away with a deeper understanding of the content and of my obligations in teaching it. My hope is that I have been able to reorient the information to reflect contemporary physical therapy practice while remaining faithful to the fundamental elements and concepts of evidence-based medicine (practice) that transcend professional disciplines.

In closing, I must remind readers of the principle of specificity of training. Just like any other skill we acquire, EBPT takes practice in order to increase one’s efficiency and effectiveness with the process. My students have taught me that practice is easiest when they are working in a culture that encourages and guides their efforts. Not surprisingly, a didactic course on the topic is a natural setting in which to receive this level of support. Once in clinical practice, however, one’s momentum may slow in the absence of colleagues and administrators who also are committed to this approach to patient/client management. The challenge is to avoid losing heart as we work to evolve our EBPT skills.

I am a firm believer in the value of small steps. We tell our patients/clients every day to appreciate little victories in their quest to recover or improve their abilities. We must allow ourselves that same opportunity where EBPT is concerned. My hope is that individuals will find this book to be an accessible resource with which to propel their efforts, even when they are “an n-of-1” in their clinical setting.

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