Research Methods in Physical Activity, 4th edition

By J.R. Thomas and J.K. Nelson. Published 2001 by Human Kinetics, Windsor, ON, and Champaign, IL (448 pp., hard cover, Cdn $94.50)

Reviewed by Roy J. Shephard, PhD, MD, DPE

There have been four editions of this book over the past 15 years, speaking plainly to its popularity as an introduction to research methods for students in physical activity and leisure studies. The new edition has grown in its external dimensions, if not in its total page length. The material on multivariate and nonparametric analyses has been expanded, and a chapter on epidemiological research has been added. This last chapter would be strengthened by including some discussion of Bradford Hill’s criteria for causal inferences in epidemiology.

The authors capture many of the unfortunate clichés and pieces of jargon that mar research writing, and a careful consideration of their warnings should enhance the reader’s writing skills. Nevertheless, I was disappointed that two examples of “good introductions” contained many throw-away phrases; in my view, each of these would have been more effective if it were 40% shorter. An English scholar might also object that the correct translation of one piece of jargon (“first of all”) is “firstly” rather than “first.”

The section on statistical concepts provides much sound information. The methods of meta-analysis are explained very clearly, and there are good discussions of experimental vs. quasi-experimental research, qualitative research, and research ethics. Among minor criticisms, students with a scientific bent would probably prefer a computer package such as Excel, SuperAnova, or Statview to the desk-top version of SPSS which the authors commend. Discussion of the “meaningfulness” of results would also be enhanced by exploring the concept of clinical meaningfulness. Chapters on historical research (Nancy Struna), philosophical research (Scott Kretschmar), survey methods, and descriptive research will broaden the vision of students who are heading for a career in exercise science. On the other hand, a 3-page historical sketch of research in physical activity is too short to have great value, and in any case is focused narrowly on events in the United States.

Humour plays a substantial part in the book. The claim is made that a proportion of the jokes have been updated in the present edition! Wit can certainly enhance elegant writing, and some quotations such as “Smoking is one of the leading causes of statistics” are worth remembering. However, the contributions of Thomas and Nelson tend to be of the genre “1/2 lavatory = 1 demijohn,” and I suspect that these witticisms have a more limited appeal.

The book is said to be written for 1st-year graduate students. Such students could certainly review the material with profit, but in Canada much of the content
Coronary Artery Disease—Essentials of Prevention and Rehabilitation Programs

By P. Brubaker, L. Kaminsky, and M. Whaley. Published 2002 by Human Kinetics, Windsor, ON, and Champaign, IL (363 pp., hard cover, Cdn $78.50)

Reviewed by Roy J. Shephard, PhD, MD, DPE

At first inspection, the topics of cardiac prevention and rehabilitation are already heavily serviced by well-accepted textbooks, and this presents a strong challenge to other authors who seek to enter this field of instruction. Nevertheless, a number of competing books are becoming somewhat dated, and in general the text of Brubaker and associates offers a refreshingly modern look at the practical issues of running a cardiac programme. The text is directed to senior undergraduates and 1st-year graduate students, primarily those in the exercise sciences. None of the three authors has a medical background, but they have addressed this potential limitation by drawing extensively upon the experience of established cardiac rehabilitation programmes at Wake Forest and Ball State Universities.

One novel feature of their approach is to treat the disease process as a continuum. Thus, no distinction is drawn between the processes of cardiac prevention and rehabilitation. Information appropriate to three case studies at increasing levels of cardiac risk surfaces in each of the various chapters of the book. Like most Human Kinetics books, there is a substantial glossary, but in contrast to most preceding volumes, this glossary appears on a chapter-by-chapter basis. The scope of the book is best summarized in terms of chapter topics—the role of cardiac prevention and rehabilitation; cardiovascular physiopathology; assessment and diagnosis of cardiac disease; prevention and treatment of coronary disease; electrocardiography; fitness assessment; exercise prescription; training responses; associated medical disorders; contemporary programmes of prevention and rehabilitation; and administrative issues.

In summarizing current views on cardiac “risk factors,” the authors highlight the paradox that the AHA now recognizes physical inactivity as a major cardiac risk factor, but at the same time it uses Framingham risk charts which include neither physical inactivity nor obesity. I was glad to see that the chapter on physiopathology accepts the idea that cardiac stroke volume plateaus at 60% of maximal oxygen intake during what I suppose is exercise in the standing or the sitting position (although surprisingly the issue of posture during exercise is not discussed).

The chapter on diagnostic testing notes the substantial costs of the various diagnostic procedures and warns of the limited extent of third-party reimbursement (at least for U.S. citizens). Bayes’ theorem is discussed clearly in relation to patient management. For those with moderate hypertension (<160/100 mm Hg),
lifestyle modification is suggested as the initial treatment of choice, rather than commitment to a lifetime of medication. I was pleased to see that potential medications are indicated in generic as well as proprietary terms.

Many textbooks have difficulty in reproducing ECGs clearly, and the authors are to be congratulated on the excellent quality of their ECG records. Nevertheless, an example showing how to count the resting heart rate from the ECG has an unusually consistent cardiac rhythm, and it would be helpful to include a second record with pronounced sinus arrhythmia.

In my view, the weakest parts of the book are those covering fitness assessment and exercise prescription. Despite 30 years of emphasis on the international standardization of units, the authors continue to use outdated measures (e.g., pounds, inches, miles per hour, and calories). A second minor problem in this section is the need to refer to the American College of Sports Medicine’s “Guidelines” in order to gain a full understanding of the procedures discussed. The units of maximal oxygen intake (ml/[kg·min]) are in some places shown incorrectly (as ml/kg/min), and the authors apparently support the dubious idea of estimating the oxygen cost of treadmill running when the patient is using the handrail. Heart rates are proposed as the best method of regulating training intensities, although it would be helpful to indicate some situations where this approach does not work well (e.g., in patients on beta-blocking medication). Finally, this section perpetuates the myth that air displacement plethysmographic estimates of body composition originated with development of the commercial BOD POD in the 1990s.

In some places I was a little riled by what I perceived as a narrow, national focus. Statistics on the prevalence of heart disease are limited to the United States, and very few citations are taken from non-U.S. journals. I was also disturbed that the recommended clinical examination makes no mention of asking a patient’s occupation! This classical clinical oversight contributed to the death of a U.S. postal employee during the recent anthrax episodes in the U.S., and it could be an important issue in the context of cardiac disease. Finally (as seems almost inevitable with this publisher), the text is littered with split infinitives. Possibly Human Kinetics should consider assigning copyediting to their English subsidiary. Nevertheless, the book has many good features, and the ground that is covered seems just about right for an undergraduate course on secondary and tertiary cardiac rehabilitation. Instructors could usefully consider its adoption for their next semester.