Book reviews

Scand J Work Environ Health 2004;30(6):497–499

Research methods in occupational epidemiology. 2nd ed. By Harvey Checkoway, Neil Pearce, David Kriebel. New York (NY): Oxford University Press; 2004. 372 pp. Monographs in epidemiology and biostatistics, vol 34. ISBN 0–19–5092 242–2. Price: GBP 29.95 (hardback).

An easy-to-read, concise, and practical textbook is a valuable contribution to every field. The second edition of *Research Methods in Occupational Epidemiology* by Checkoway et al is such a book. The price is also reasonable. It includes basic aspects of study design, a collection of information on exposure and disease, and data analysis. In comparison with the first edition, this edition not only includes a revision of the old text, but also adds new techniques, such as case-crossover studies, and new chapters on health surveillance and meta-analysis and data pooling. I will keep this book on my shelf as my first choice for issues on exposure–response modeling and cohort and cross-sectional studies, while my first choice for assistance with case–control studies and general concepts in epidemiology will remain *Modern Epidemiology* by Rothman & Greenland.

Covering such a wide field in 372 pages implies that some topics are only touched upon, some must be left out, and very few can be discussed in depth. Such in-depth descriptions of different approaches and their strengths and weaknesses are found in the chapters on cohort studies, cross-sectional studies, and exposure- and dose-modeling. They span from practical hints about how to identify the cohort and find information on exposure and outcome to a sophisticated, but still very readable, discussion about how to minimize the healthy worker effect and include stratification for employment status and duration of follow-up in cohort studies and exposure before being a case (eg, exposure during the 2 years before asthma diagnosis) in cross-sectional studies

Similarly, exposure- and dose-modeling go from explaining simple cumulative exposure indices (like fiber-years/milliliter) to advanced models including clearance capacity in the lungs, allowing the dose-rate to determine the risk. These chapters are remarkably informative on both a basic and an advanced level.

Issues on designing and performing case–control studies have been presented well, and are up-to-date on a basic level. So is, as far as I can determine, the text on different analytical techniques. The latter includes important points about pitfalls in categorizing exposure when exposure–response associations are analyzed and a fairly detailed discussion about lagging exposure and the consideration of, specifically, exposure in the relevant time-window in the analyses. Also included are chapters about health surveillance, meta-analysis, and risk assessment.

On the whole, the many examples used throughout the book have been well chosen and are up-to-date. Actually two of them, on exposure–response associations for silica, even reminded me that the Swedish occupational threshold limit value for quartz, from 1996, should be re-evaluated.

Have then any topics been left out which should be part of the basic toolbox for occupational epidemiologists? To me, etiologic fraction (attributable proportion) is such a tool. The estimation of the proportion of a specific disease that could be avoided if a specific exposure was reduced is, to me, a powerful way for epidemiologists to communicate science to decision makers.

The case–case approach, used, for instance, in analyses of gene–environment interactions, is now also a part of occupational epidemiology, not only genetic epidemiology.

In addition, I think that basic risk communication issues should have been addressed. This is something most epidemiologists are confronted with in the same instant that their results are ready.

The chapter on the characterization of the workplace environment deals explicitly only with chemicals. The examples used throughout the book usually deal with these problems too. In my opinion, it would have been an advantage to include more of the other fields. Many of the young readers of this book will work with noise and physical and psychological workloads. Picking more examples from these areas would probably make it easier for them to see the applicability of the methods described, and obviously also better reflect the width of the field of occupational epidemiology.

A comparatively short basic textbook has to meet the challenge of listing pros and cons and give more-or-less definite advice on several controversial methodological issues. In this case, it involves what to do with subjects lost to follow-up, missing information on exposure, strategies for cohort analyses, proportional mortality studies, and the like. Generally, I found the positions taken well argued, and reasonable, although a bit categorical when recommending matching on vital status in case–control studies of diseases with high fatality to obtain similar misclassification of exposure for cases and controls, without mentioning the arguments for not matching in order to get the best possible information. The bias for comparing workers with the general population is discussed, and adequate control populations are suggested, but, in my opinion, absolution is granted a bit too easily for staying with comparisons with the general

population for practical reasons. On the other hand, subcohort analyses are stressed and well described, and may yield the main results.

The practical considerations presented in the book are mainly based on the conditions for follow-up in the United States with regard to vital status and disease outcome. The much easier situation with national population registers in Scandinavia is mentioned. However, historical (retrospective) cohort studies are described as "usually restricted to the investigation of fatal diseases [p 65]". Cancer registers and registers of births and malformations are available in many countries (not only in Scandinavia). In addition, hospital records are probably an under-used opportunity. It seems to me that there is a point in indicating these possibilities, rather than limiting the thoughts from the beginning.

Moreover, self-reported outcome (eg, from questionnaires) can be used in a historical cohort analysis, for instance, in studies of asthma and dermatological and musculoskeletal diseases, provided that the case-identifying questions, and subject recollection of time of onset of disease, can be shown to be reasonably valid.

In my opinion, the practical hints are generally sound and highly relevant but would have benefited from a somewhat wider scope, stimulating the reader to look for possibilities that have a potential for more use.

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Practical ethics in occupational health. By Peter Westerholm, Tore Nilstun, John Øvretveit. Oxford: Radcliffe Medical Press; 2004. 348 p. ISBN 1 85775 617 7.

Occupational health meets special ethical problems in addition to those met in health care in general because of its role between different expectations of the stakeholders, such as employers, employees, work communities, labor market organizations, and society. Whereas medical ethics usually focuses on individuals, the activity of occupational health has to be oriented towards individual workers, workplaces, and work communities. Some organizations, such as the International Commission of Occupational Health (ICOH) and the Faculty of Occupational Medicine (FAO) of the Royal College of Physicians in the United Kingdom, have published ethics codes specifically for occupational health. There are indications, however, that these codes are not always been easily adopted. The difficulty may be due to the fact that they are extensive and written at a relatively general level. It is obvious that more practical guidelines are needed, and the present book is a welcome supplement to the general codes.

The primary target group of the book consists of occupational health personnel, but it is thought to meet also the needs of occupational health customers. A special feature is that the authors come from Belgium, Denmark, Finland, The Netherlands, Norway, Sweden, and the United Kingdom, and, therefore they have much common ground in understanding ethical values. The book has not even tried to represent universality in ethical problems. The answers to the presented ethical questions would certainly differ considerably throughout the world.

The book has a very wide approach to the subject. It starts with change in worklife, research-informed practice, and quality and ends with ethics management, research and education, and the views of the employer and the trade union. The main part of the book consists of ethical problems in the practical work of occupational health, such as risk assessment, workplace intervention, health surveillance, work disability assessment, sickness absence, and some actual problems, like drug and alcohol testing and genetic screening. Special chapters consider ethics in insurance medicine, the recognition of work-related diseases, and the diagnostics of occupational diseases. In addition, some chapters discuss their topics thoroughly, not concentrating on ethical aspects, which unnecessarily increases the volume of the text.

The book is not meant to be normative. Instead, its purpose is to help occupational health personnel identify and analyze ethical problems in their everyday work. A method with which to analyze an ethical problem and compare different alternative solutions is presented and used in most chapters of the book. First, the stakeholders (people involved in the situation) ought to be identified. An evaluation is made of how the three ethical principles, beneficence, autonomy and justice, would be fulfilled in different alternatives. The next steps are choosing the most important ethical principle, making the ethical

choice, and, thereafter, evaluating the consequences of the decision and the evaluation of self-interest bias and justification. Finally, it should be determined whether spending more time would help in making a more ethical decision. The model may be laborious and not necessarily suitable in all cases, but it helps to assure that all relevant aspects are taken into consideration.

The book is based on practical cases that help make the subject more concrete and lively. It is interesting that, in spite of the similarity of the authors' home countries, the differences in legislation, culture, traditions, and organizational structures make some problems difficult to generalize even among these countries. My attention was drawn to the different role of occupational health in relation to employers. Some problems (for instance, preemployment health examinations and problems with alcohol and drugs) were presented as if occupational health personnel would be in a decisive position. The responsibility of the employers was discussed very little, as was raising the ethical questions to be discussed with the employers, which I think is the ethical duty of occupational health personnel.

The preface indicates that the book is meant to be practical, and no philosophical innovations should be even expected. Nevertheless, the book contains 350 pages. The ethical questions are, of course, complicated, and it is important that the problems are discussed from several points of view. This approach has made the text a little exhaustive, however, and may diminish the reading motivation of those who have no deep interest in ethical questions. Thus the book will not necessarily be as practical as the authors had hoped. A little more concise presentation and a stricter selection of topics might have improved the readability.

The book is a welcome addition to the ethical discussion in occupational health, and it can be recommended to all occupational health personnel and their customers who are interested in ethical questions.

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