

BOOK REVIEWS

Yang Y, West-Strum D. *Understanding Pharmacoepidemiology*. New York, NY. McGraw-Hill Medical 2010. 208 pages; \$45.00 (paperback). ISBN 0-07-163500-9 / 978-0-07-1635004.

Reviewed By: Olayinka O. Shiyanbola, BPharm, PhD
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Understanding Pharmacoepidemiology is an introductory but valuable book for pharmacy students, pharmacists, and other health care professionals who need a basic understanding of pharmacoepidemiology, medication use, and safety in large populations. According to pharmacy education accreditation standards, pharmacy students need to be equipped in the knowledge of medication use and its effects, and the research methodology and statistics associated with such studies. This book is a useful resource for understanding basic concepts used in pharmacoepidemiology studies, techniques used in investigating associations of medication use and outcomes, and the interpretations of such findings.

This book has 10 chapters and a glossary at the end to help readers understand pharmacoepidemiology terminologies. It also includes several case studies, discussion questions, and summaries which make it a useful tool in the classroom setting to generate dialogues that will enable critical thinking among students.

The first chapter starts off with an introduction to the field of pharmacoepidemiology with brief descriptions of the phases of clinical trials, the US drug development and approval process, types of research questions that could be answered in pharmacoepidemiology research, and the different roles and opportunities for pharmacists to be involved. Chapter 2 gives the reader a basic introduction to concepts and language usually used in epidemiology and calculations of association and effect measures. Case studies within the chapter will help the reader understand how the concepts are applied and interpreted in real life research studies. Chapter 3 covers an overview of the different study designs used in pharmacoepidemiology research. The advantages, disadvantages, and limitations of each design are also discussed. Chapter 4 examines the different data sources used in pharmacoepidemiological research and defines important issues to consider when analyzing secondary data. Chapters 5 and 6 delve more deeply into biostatistics as they give basic descriptions of variables and how to make statistical inferences, and examine the different types of statistical tests that can be used and methodological issues to consider in pharmacoepidemiology studies. Chapter 7 covers how to evalu-

ate and interpret pharmacoepidemiology literature, while Chapter 8 focuses on medication use patterns and concepts such as adherence, compliance, and persistence. Calculations of each measure and elements of its analysis using claims data are also examined. The last 2 chapters of the book (Chapter 9 and 10) focuses on drug safety, the role of the Food and Drug Administration in postmarketing drug surveillance, and the different strategies and efforts presently being used to address medication safety and reduce adverse events.

In summary, *Understanding Pharmacoepidemiology* is an easy to read, informational text that will educate individuals who are interested in gaining knowledge related to research in the field of pharmacoepidemiology. Though the book does not delve deeply into each subject matter, it provides an introductory insight for those who want an easy to understand text, which can then create a pathway for further exploration in other specialized texts. This book will be a good resource for pharmacy students learning medication use outcomes and medication safety, research methodologies, and evaluation of pharmacoepidemiology literature.

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Rajender R. Aparasu . *Research Methods for Pharmaceutical Practice and Policy*. Gurnee IL: Pharmaceutical Press; 2011. 192 pp, \$57.50 (paperback) ISBN 9780853698807.

Reviewed By: Dean L. Arneson, PharmD, PhD
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Performing research in the area of pharmacy practice and policy can be a complicated process. The nuances of identifying and developing the research question, designing the research method, and conducting the research can be complex. The collection and analysis of the data and the interpretation of the results can benefit from a well-designed study.

The editor has assembled a book that will take the reader through the steps of research from the conception of the research question through possible journals for submission. Also included are 2 appendices: one with possible funding sources for research and the other with a list of journals for publications. The book provides a good overview of the theoretical research process but it does lack examples in many of the areas to make it a useful, stand-alone textbook. Although a multitude of authors are used

for various chapters, the course of the book is relatively seamless.

Each chapter begins with learning objectives and ends with review questions to emphasize the main points. The chapters are arranged in the stepwise order of performing research. The first 3 chapters focus on the philosophy of research and how to approach it in a scientific manner. The chapters provide an introduction to the ideas of concepts, constructs, and theoretical models applied in healthcare utilization and outcomes and relate them to variables used in pharmaceutical practice and policy.

Chapter 4 reviews and discusses the nature, level, and issues of measurements, including an overview of both internal and external reliability and validity. Chapters 5-7 provide a logical approach to experimental design and sampling methods. Chapter 8 explains the systematic review of literature and how to assess the quality of systematic reviews.

Chapters 9 and 10 provide a review of qualitative and quantitative data collection methods and survey design. The chapters review the strengths and weaknesses of different types of survey designs and evaluate the common scales used with different types of survey designs.

Chapters 11-14 concentrate on data analysis. Chapter 11 begins by discussing common statistical terminology and then proceeds to explain descriptive and inferential statistics. It provides an overview of statistical testing and describes a variety of statistical techniques. Chapters 12 and 13 review secondary data sets (administrative and commercial, respectively). There is a review of Medicaid and Medicare data sets and common medical coding conversions. The uses of commercial data sets are presented and factors researchers need to consider when choosing a commercial data source are discussed. Chapter 14 considers strengths and weaknesses of research approaches involving data at national levels.

Chapter 15 walks the reader through the steps involved in the evaluation of research programs and discusses the standards that should be considered for an effective program evaluation. The final chapter examines the current issues and the future direction of pharmaceutical policy research. The chapter details the current methods and metrics used in pharmaceutical policy research and discusses data sources and the quality measurement. Some of the unresolved issues that are brought up include evidence-based practice, pharmacist practice limits, and effectiveness research.

Very useful aspects of the textbook are the 2 appendices. The first appendix provides a list of journals to which research articles could be submitted. The editor provides a brief description of types of research each journal publishes and its contact information. The second

appendix is a selective list of funding resources for pharmaceutical practice and policy research. Individuals who are interested in teaching or performing research in the area of pharmacy practice and policy should consider obtaining this book as a resource for their library.

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Krska J. Pharmacy in Public Health. London, England. Pharmaceutical Press; 2011. 284 pp, \$ 49.99, ISBN 978-0853698791.

Reviewed By: Fadi M. Alkhateeb, PhD, MBA, BSPHarm, and Isaac Thompson, PharmD Candidate University of Charleston School of Pharmacy

Pharmacy in Public Health (2011) by Janet Krska is intended to inform pharmacists in the United Kingdom but also those from other countries about public health and the opportunities that pharmacists have to shape public health policy and the health outcomes of their community. The book not only discusses what public health is and what can be done by pharmacists, but also discusses evidence-based outcomes of these services from pharmacies. Though this book evaluates the place of pharmacists in public health, it has a large focus on public health in the United Kingdom which cannot be translated directly to pharmacists of other countries due to differences in healthcare systems and different societal needs.

The author, Janet Krska, states in the preface for the book that her main goal is to help “support pharmacists in developing their public health skills” (1). Krska accomplishes this through a 284-page book that is broken into 3 sections that discuss what public health is, developing services in pharmacies, and improving public health through these services. These sections are further broken down into 14 chapters that range from 12 to 24 pages and further develop and support the 3 sections by delivering information in an informative manner that uses charts and figures to supplement the more difficult topics, such as public needs assessment and service development.

Krska devotes the first section to what public health is and supports this through the first 5 chapters (chapter 1 discusses public health in the UK; chapter 2, factors of health; chapter 3, role of pharmacy in public health; chapter 4, health data of different diseases in populations; and chapter 5, discusses international public health issues). Krska is able to clearly define public health and population needs and the role of the pharmacist in delivering

services to meet these needs. While Krska effectively discusses the structure of public healthcare organization at different levels of government, Krska's discussion of international needs is weak, only covering 3 diseases in a few countries of Africa. Krska tries to also discuss opportunities for pharmacists volunteering in these developing nations but neglects to consider those nations that are already developed but have their own public health issues such as industrial waste and pollutants.

The second section of the book is devoted to the development of service to promote public health. Again this section is supported by 5 chapters (chapter 6 discusses public needs assessment and involvement; chapter 7, delivery of evidence-based medicine; chapter 8, different healthcare professions working together to promote health; chapter 9, developing services in pharmacies to meet public needs; and chapter 10, risk and benefits of human behaviors). While Krska again uses data that is more relevant to the UK, both in chapter 6 and chapter 7, the section as a whole is of high quality and supplemented with charts and figures to convey topics that can be easily followed in a logical manner when pharmacists attempt to develop their own public health projects. The author not only develops risk and benefits assessment of human behaviors, but also gives suggestions on how to interact with the public and convey how these health changes will impact them in a positive manner.

The last section is devoted to how pharmacy can improve public health and is supported by 4 chapters. Topics cover a range of areas from opportunities for pharmacists to educate the public to health screenings, with each chapter devoted to one aspect of improvement (chapter 11 discusses education of the public; chapter 12, protection of the populations health; chapter 13, prevention of disease through screening the public; and chapter 14, medicine management). This section of the book is the best presented and is relevant to pharmacists including the international community of pharmacy. Krska elaborates on how to educate the community in a positive way and on a level that is easily understood. She also discusses protection of the public through preventative measures such as immunizations to certain diseases. Krska further develops the notion of creating services for the public, eg, screening the population

for known diseases present within the population. In the final chapter Krska discusses the management of medicines and includes prescribing cost-effective medicines as well as controlling drug products and their safety. While this section is generally well developed, the last chapter on medicine management consists of several different topics and as a result is not as well elaborated on as the rest of the book. Either the chapter should have been expanded or possibly broken in to 2 chapters—one consisting of government duties to ensure proper management, such as drug efficacy and purity, and a separate chapter consisting of what pharmacists could manage, such as cost effectiveness and proper medication use in the population.

In this book, Krska acknowledges the need for public health initiatives and presents not only opportunities for pharmacists to assist in these programs but also suggests how to initiate programs that are specific to pharmacy practice and can promote the population's health. Krska's 3 main sections are sufficient and well developed to support her major goal of discussing public health but data presented tends to have a focus on the United Kingdom and countries that used to be part of the British Empire. While these countries may represent different areas of the world, their governments tend to resemble that of the present United Kingdom and therefore may not be initiated elsewhere in the same way due to differing government structures and regulations on healthcare. However, this does not override the merits of the book in providing suggestions on how to interact with local and national populations to improve public health and ensure prevention, and should be seen as a case study of public health which can be adapted to other national governments and pharmacies around the world. Overall, this book is easily understood and presents information in a logical manner that readers can adapt to better the public health of their community, region, and nation.

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