

NURSING RESEARCH: GENERATING AND ASSESSING EVIDENCE FOR NURSING PRACTICE

Eighth Edition

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8th Edition

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Some drugs and medical devices presented in this publication have Food and Drug Administration (FDA) clearance for limited use in restricted research settings. It is the responsibility of the health care provider to ascertain the FDA status of each drug or device planned for use in their clinical practice.

TO NORAH AND RYAN

Whose wedding preparations provided splendid
balance during the writing of this book, and whose
exuberance was contagious



Preface

What a fabulous journey this eighth edition has been! This edition marks the most sweeping revision we have undertaken, as signaled by the book's new title. We have been energized and exhilarated by the new content, the new organizational approach, and the new enrichment opportunities embodied in this book. We see this book as a watershed edition of a classic textbook. We have retained many features that have made this book a classic, but have introduced important innovations that we think will make it easier and more rewarding to embark on a professional pathway that includes research.

NEW TO THIS EDITION

Upfront and Consistent Emphasis on Evidence-Based Practice

We have made several changes to emphasize that research is an evidence-building enterprise that is crucial to nursing practice. We elevated the chapter on evidence-based practice (EBP) to greater prominence by making it the second chapter in the current edition (it was previously the final chapter), and greatly expanded its content. We stress throughout

that the decisions researchers make in designing and implementing a study have implications for the quality of evidence the study yields—and that the quality of evidence affects the utility of study findings for nursing practice. We have also added a new chapter on systematic reviews, considered by many to be the cornerstone of EBP. Also, given the need for nurses to evaluate evidence regularly, we have offered critiquing advice in *every* chapter of the book, rather than relegating critiquing guidelines to a chapter at the end.

New Content Reflecting Contributions of Medical Research Methodology

Nurse researchers have historically tended to use methods and jargon based in the social sciences, but the push for EBP in medicine has led to methodologic breakthroughs that have implications for all health care research. Moreover, it is important for nurses to become familiar with medical research terms and approaches so they can stay abreast of new clinical developments. This edition offers a balanced presentation of medical and social science techniques and nomenclature, and features innovative concepts emerging in the medical research literature.

New Organization of Qualitative and Quantitative Materials

Although previous editions endeavored to balance material on qualitative and quantitative methods, this balance may have been obscured by intermingling content on both approaches within chapters. In the previous editions, data collection methods were organized by type of approach (for example, a chapter on self-reports) rather than by the nature of data gathered (structured versus unstructured). Our new organization reflects our revised thinking about how our textbook is used, and how best to convey the spirit of different types of inquiry.

New Chapters

As noted, we have included a new chapter on systematic reviews (Chapter 25). This eighth edition also includes a new chapter on the development of self-report scales (Chapter 18), an area of increasing importance as nurses endeavor to construct high-quality instruments and screening tools to measure clinically important concepts. Finally, we have added a chapter on approaches to enhancing and assessing integrity in qualitative inquiry (Chapter 20). Because qualitative research is not linear—and because strategies for enhancing the quality and integrity of qualitative studies flow throughout the endeavor—we struggled with where in the book it would be best to describe such strategies. In placing this chapter near the end, we do not mean to imply that the strategies are of minor importance, nor that they should be “afterthoughts” to worry about only after data have been collected and analyzed. For those learning to do qualitative research, we consider this one of the most important chapters of the book because it is an all-encompassing topic for qualitative inquiry.

The Toolkit

Our biggest innovation for this edition is included in the accompanying *Resource Manual*. In our technologically advanced environment, it is possi-

ble to not only *illustrate* methodologic tools as graphics in the textbook, but to make them directly available for use and adaptation. Thus, we have included dozens upon dozens of documents in Word files that can readily be adapted in research projects, without forcing users to “reinvent the wheel” or tediously retype material from the textbook. Examples include informed consent forms, a demographic questionnaire, content validity forms, templates for tables of statistical results, and a coding sheet for a meta-analysis—to name only a few.

ORGANIZATION OF THE TEXT

The content of this edition is organized into six main parts.

- **Part 1—Foundations of Nursing Research and Evidence-Based Practice** introduces fundamental concepts in nursing research. Chapter 1 summarizes the history and future of nursing research, discusses the philosophical underpinnings of qualitative research versus quantitative research, and describes major purposes of nursing research. Chapter 2 offers guidance on utilizing research to build an evidence-based practice. Chapter 3 introduces readers to key research terms, and presents an overview of steps in the research process for both qualitative and quantitative studies.
- **Part 2—Conceptualizing a Study to Generate Evidence for Nursing** further sets the stage for learning about the research process by discussing issues relating to a study’s conceptualization: the formulation of research questions and hypotheses (Chapter 4); the review of relevant research (Chapter 5); the development of theoretical and conceptual contexts (Chapter 6); and the fostering of ethically sound approaches in doing research (Chapter 7).
- **Part 3—Designing a Study to Generate Evidence for Nursing** presents material on the design of qualitative and quantitative nursing research studies. Chapter 8 provides an overview of important issues that must be attended to dur-

ing the planning of any type of study. Chapter 9 is devoted to research designs for qualitative studies, including material on critical theory, feminist, and participatory action research. Chapter 10 describes fundamental principles and applications of quantitative research design, and Chapter 11 focuses on methods to enhance the rigor of a quantitative study, including mechanisms of research control. Chapter 12 examines research with different purposes, including mixed method research in which methods for qualitative and quantitative inquiry are blended. Chapter 13 presents designs and strategies for selecting samples of study participants.

- **Part 4—Collecting Research Data** concerns the gathering of information to address research questions. Chapter 14 discusses the design and implementation of an overall data collection plan. Chapter 15 describes methods of gathering unstructured self-report and observational data for qualitative studies, while Chapter 16 describes the collection of structured data for quantitative studies. Chapter 17 discusses the concept of measurement, and then focuses on methods of assessing the quality of data from formal measuring instruments. Chapter 18 presents new material on how to develop high-quality self-report instruments.
- **Part 5—Analyzing and Interpreting Research Data** discusses analytic methods for qualitative and quantitative research. Chapter 19 discusses methods of doing qualitative analyses, with specific information on grounded theory, phenomenological, and ethnographic analyses. Chapter 20 elaborates on methods qualitative researchers can use to enhance (and assess) integrity and quality throughout their inquiries. Chapters 21, 22, and 23 present an overview of univariate, bivariate, and multivariate statistical analyses, respectively. Chapter 24 describes the development of an overall analytic strategy for quantitative studies, including new material on interpreting results.
- **Part 6—Building an Evidence Base for Nursing Practice** provides additional guidance on linking research and clinical practice. Chapter

25 offers an overview of methods of conducting systematic reviews that support EBP, with an emphasis on meta-analyses and metasyntheses. Chapter 26 discusses dissemination of evidence—how to prepare a research report (including theses and dissertations), and how to disseminate and publish research findings. The concluding chapter (Chapter 27) offers suggestions and guidelines on developing research proposals and getting financial support.

KEY FEATURES


This textbook was designed to be helpful to those who are learning how to do research, as well as to those who are learning to appraise research reports critically and to use research findings in practice. Many of the features successfully used in previous editions have been retained in this eighth edition. Among the basic principles that helped to shape this and earlier editions of this book are (1) an unswerving conviction that the development of research skills is critical to the nursing profession; (2) a fundamental belief that research is an intellectually and professionally rewarding enterprise; and (3) a judgment that learning about research methods need be neither intimidating nor dull. Consistent with these principles, we have tried to present the fundamentals of research methods in a way that both facilitates understanding and arouses curiosity and interest. Key features of our approach include the following:



- **Research examples.** Each chapter concludes with one or two actual research examples designed to highlight critical points made in the chapter and to sharpen the reader's critical thinking skills. In addition, many research examples from around the world are used to illustrate key points in the text and to stimulate students' thinking about a research project.
- **Critiquing guidelines.** Most chapters include a section devoted to guidelines for conducting a critique of each aspect of a research report. These sections provide a list of questions to draw attention to specific aspects of a report that are amenable to appraisal.

- **Clear, “user-friendly” style.** Our writing style is designed to be easily digestible and nonintimidating. Concepts are introduced carefully and systematically, difficult ideas are presented clearly, and readers are assumed to have no prior exposure to technical terms.
- **Specific practical tips on doing research.** The textbook is filled with practical guidance on how to translate the abstract notions of research methods into realistic strategies for conducting research. Every chapter includes several tips for applying the chapter’s lessons to real-life situations. The inclusion of these suggestions acknowledges the fact that there is often a large gap between what gets taught in research methods textbooks and what a researcher needs to know in conducting a study.
- **Aids to student learning.** Several features are used to enhance and reinforce learning and to help focus the student’s attention on specific areas of text content, including the following: succinct, bulleted summaries at the end of each chapter; tables and figures that provide examples and graphic materials in support of the text discussion; and study suggestions at the end of each chapter.

TEACHING-LEARNING PACKAGE

The eighth edition of *Nursing Research: Generating and Assessing Evidence for Nursing Practice* has an ancillary package designed with both students and instructors in mind.

- **Free CD-ROM** . The textbook also includes a CD-ROM that provides lists of relevant and useful websites for each chapter, which can be “clicked” on directly without having to retype the URL and risk a typographical error. An expanded glossary for the text also appears on this CD-ROM. Finally, statistical tables of significance values for four frequently used statistical tests are also included on the CD-ROM for reference.

- **Resource Manual to Accompany Nursing Research, Eighth Edition.** The manual augments the textbook in important ways. It provides students with exercises that correspond to each text chapter, with a focus on opportunities to critique actual studies. Answers to most study exercises are included in the appendices. The appendices also include 11 research reports in their entirety, plus a successful grant application for a study funded by the National Institute of Nursing Research. The 11 reports cover a range of nursing research endeavors, including qualitative and quantitative studies, an instrument development study, and two systematic reviews. Full critiques of two of the reports are also included and can serve as models for a comprehensive research critique.
- **The Toolkit** . This must-have innovation will save considerable time for both students and seasoned researchers. Included on the CD-ROM that accompanies the *Resource Manual to Accompany Nursing Research, Eighth Edition*, the Toolkit offers dozens of research resources in Word documents that can be downloaded and used directly or adapted. The resources, most of which have been pretested and refined in our own research, reflect best-practice research material.
- **The Instructor’s Resource CD-ROM.** This includes PowerPoint slides summarizing key points in each chapter, and, in this edition, they are available in a format that permits easy adaptation. An Image Collection that contains all of the figures, boxes, and tables from the book is also included as a resource for instructors. In addition, test questions have been placed into a program that allows instructors to automatically generate tests complete with instructions and an answer key. These tests will help you identify students’ areas of strength—as well as those areas needing further attention. Finally, the websites that are included on the free CD-ROM that accompanies the text are also included on the Instructor’s Resource CD-ROM for your easy access.
- **ThePoint**  (<http://thepoint.lww.com>), a trademark of Wolters Kluwer Health, is a web-based

course and content management system providing every resource instructors and students need in one easy-to-use site. Advanced technology and superior content combine at thePoint to allow instructors to design and deliver on-line and off-line courses, maintain grades and class rosters, and communicate with students. Students can visit thePoint to access supplemental multimedia resources to enhance their learning

DENISE F. POLIT, PHD



experience, check the course syllabus, download content, upload assignments, and join an on-line study group.

It is our hope that the content, style, and organization of this book continue to meet the needs of a broad spectrum of nursing students and nurse researchers. We also hope that the book will help to foster enthusiasm for the kinds of discoveries that research can produce, and for the knowledge that will help support an evidence-based nursing practice.

CHERYL TATANO BECK, DNSc, CNM, FAAN





Acknowledgments

This eighth edition, like the previous seven editions, depended on the contribution of many individuals. Many faculty and students who used the text have made invaluable suggestions for its improvement, and to all of you we are very grateful. In addition to all those who assisted us during the past 30 years with the earlier editions, the following individuals deserve special mention.

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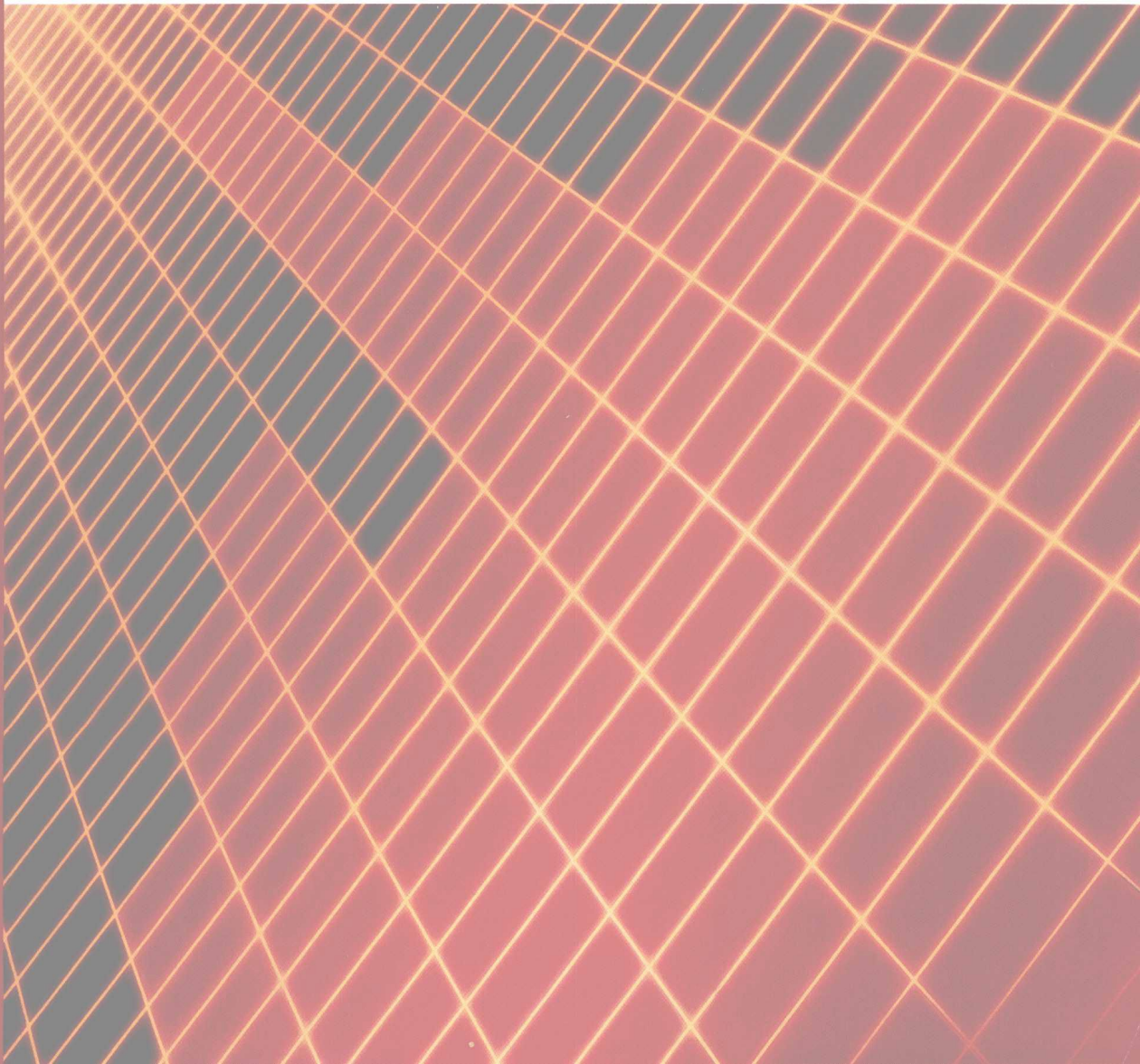
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PART 1

FOUNDATIONS OF
NURSING RESEARCH AND
EVIDENCE-BASED PRACTICE



1 Introduction to Nursing Research in an Evidence-Based Practice Environment

NURSING RESEARCH IN PERSPECTIVE

In all parts of the world, nursing has experienced a profound culture change over the past few decades. Nurses are increasingly expected to understand and conduct research, and to base their professional practice on emerging evidence from research—that is, to adopt an **evidence-based practice (EBP)**. EBP is broadly defined as the use of the best clinical evidence in making patient care decisions, and such evidence typically comes from research conducted by nurses and other health care professionals.

What Is Nursing Research?

Research is systematic inquiry that uses disciplined methods to answer questions or solve problems. The ultimate goal of research is to develop, refine, and expand a body of knowledge.

Nurses are increasingly engaged in disciplined studies that benefit the profession and its clients, and that contribute to improvements in the entire health care system. **Nursing research** is systematic inquiry designed to develop trustworthy evidence about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics. In this book, we emphasize **clinical nursing research**, that is, research designed

to guide nursing practice and to improve the health and quality of the life of nurses' clients.

Nursing research has experienced remarkable growth in the past three decades, providing nurses with an increasingly sound evidence base from which to practice. Yet many questions endure, and much remains to be done to incorporate research-based evidence into nursing practice.

Examples of nursing research questions:

- Does canine visitation (pet) therapy result in decreased pain in hospitalized children? (Sobo, Eng, & Kassity-Krich, 2006)*
- What is it like to be a family caregiver to relatives with severe and persistent mental illness? (Chang & Horrocks, 2006)

The Importance of Research in Nursing

Because of broad support for evidence-based nursing practice, research has assumed heightened importance for nurses. Although there is not a consensus about what types of “evidence” are appropriate for EBP (Goode, 2000), there is general agreement that research findings from rigorous studies provide especially strong evidence for

* Citations to studies such as this are at the end of each chapter, but other citations are at the end of the book, beginning on page 731.

informing nurses' decisions and actions. Nurses are accepting the need to base specific nursing actions and decisions on evidence indicating that the actions are clinically appropriate, cost-effective, and result in positive outcomes for clients.

In the United States, research has come to play an important role in nursing in terms of credentialing and status. The American Nurses Credentialing Center—an arm of the American Nurses Association and the largest and most prestigious credentialing organization in the United States—has developed a Magnet Recognition Program to recognize health care organizations that provide very high-quality nursing care, and to elevate the standards and reputation of the nursing profession. As noted by Turkel and her colleagues (2005), “To achieve Magnet status, the Chief Nurse Executive needs to create, foster, and sustain a practice environment where nursing research and evidence-based practice is integrated into both the delivery of nursing care and the framework for nursing administration decision making” (p. 254).

Changes to nursing practice are occurring regularly because of EBP efforts. Often these practice changes are local initiatives, many of which are not publicized, but broader clinical changes are also occurring based on accumulating research evidence about beneficial practice innovations.

Example of evidence-based practice:

Numerous clinical practice changes reflect the impact of research. For example, “kangaroo care” (the holding of diaper-clad preterm infants skin-to-skin, chest-to-chest by parents) is now widely practiced in neonatal intensive care units (NICUs) in the United States (Engler et al., 2002) and elsewhere, but this is a new trend. As recently as the early 1990s, only a minority of NICUs offered kangaroo care options. The adoption of this practice reflects the accumulating evidence that early skin-to-skin contact has clinical benefits without any apparent negative side effects (e.g., Dodd, 2005). Some of that accumulated evidence was developed in rigorous studies by nurse researchers in the United States, Australia, Canada, Taiwan, and other countries (e.g., Chwo et al., 2002; Johnston et al., 2003; Ludington-Hoe et al., 2004).

The Consumer–Producer Continuum in Nursing Research

With the current emphasis on EBP, it has become every nurse's responsibility to engage in one or more roles along a continuum of research participation. At one end of the continuum are those nurses whose involvement in research is indirect. **Consumers of nursing research** read research reports to develop new skills and to search for relevant findings that may affect their practice. Nurses are now expected to maintain this level of involvement with research, at a minimum. EBP depends on well-informed nursing research consumers.

At the other end of the continuum are the **producers of nursing research**: nurses who actively participate in designing and implementing studies. At one time, most nurse researchers were academics who taught in schools of nursing, but research is increasingly being conducted by practicing nurses who want to find what works best for their patients.

Example of research by hospital-based nurses:

Huddleston and five other nurses (2005) who worked at Apple Hill Infusion Center and York Hospital in York, Pennsylvania were concerned about drug reactions of patients receiving two chemotherapeutic agents, paclitaxel (Taxol) and carboplatin. They conducted a study that involved reviewing patients' charts at the Infusion Center. Based on their findings, the nursing team collaborated with primary physician providers to develop what they called “rechallenge protocols” for patients who have experienced such reactions.

Between these two end points on the consumer–producer continuum lie a rich variety of research activities in which nurses may engage. These activities include the following:

- Participating in a **journal club** in a practice setting, which involves meetings among nurses to discuss and critique research articles
- Solving clinical problems and making clinical decisions based on rigorous research
- Collaborating in the development of an idea for a clinical research project