ESSENTIALS OF
Nursing Research

APPRAISING EVIDENCE FOR NURSING PRACTICE

Tenth Edition

Denise F. Polit
Cheryl Tatano Beck

Wolters Kluwer

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TO

Our families and friends

The heroes on the front lines of health care

Those who are working to address social and health inequities

ABOUT THE AUTHORS

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Denise F. Polit, PhD, FAAN, is an American health care researcher who is recognized internationally as an authority on research methods, statistics, and measurement. She received her Bachelor's degree from Wellesley College and her PhD from Boston College. She is the president of a research consulting company, Humanalysis, Inc., in Saratoga Springs, New York, and an adjunct professor at Griffith University, Brisbane, Australia. She has published in numerous journals and has written several award-winning textbooks, including a groundbreaking book on measurement in health, *Measurement and the Measurement of Change: A Primer for the Health Professions*, and a book on statistical analysis, *Statistics and Data Analysis for Nursing Research*. Her research methods books with Dr.

Cheryl Tatano Beck have been translated into French, Spanish, Portuguese, German, Chinese, and Japanese. She has been invited to give lectures and presentations in many countries, including Australia, India, Ireland, Denmark, Norway, South Africa, Turkey, Sweden, and the Philippines.

Denise has lived in Saratoga Springs for 33 years and is active in the community. She has assisted numerous nonprofit organizations in designing surveys and analyzing survey data. Currently, she serves on the board of directors of the Saratoga Foundation and the New Leaf Coalition, an organization dedicated to addressing the complex needs of formerly incarcerated people in New York City.

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Over the past 35 years, Cheryl has focused her research efforts on developing a research program on postpartum mood and anxiety disorders. Based on the findings from her series of qualitative studies, Cheryl developed the Postpartum Depression Screening Scale (PDSS), which is published by Western Psychological Services. She is a prolific writer who has published over 150 journal articles. In addition to coauthoring award-winning research methods books with Denise Polit, Cheryl coauthored with Dr. Jeanne Driscoll *Postpartum Mood and Anxiety Disorders: A Clinician's Guide*, which received the 2006 *American Journal of Nursing* Book of the Year Award. In addition, Cheryl has published five other books: *Traumatic Childbirth*, *Routledge International Handbook of Qualitative Nursing Research*, *Developing a Program of Research in Nursing*, *Secondary Qualitative Analysis in the Health and Social Sciences*, and *Introduction to Phenomenology: Focus on Methodology*.

PREFACE

Essentials of Nursing Research, 10th edition, helps students learn how to read and critically appraise research reports and to develop an appreciation of research as a path to enhancing nursing practice.

We continue to enjoy updating this book with important innovations in research methods and with examples of nurse researchers' use of emerging research strategies. Feedback from our loyal adopters has inspired several important changes to the content and organization of this book. We are convinced that these revisions introduce important improvements—while at the same time retaining many features that have made this book a classic best-selling textbook throughout the world. The 10th edition of this book, its study guide, and its online resources will make it easier and more satisfying for nurses to pursue a professional pathway that incorporates thoughtful appraisals of evidence.

LEGACY OF *ESSENTIALS OF NURSING RESEARCH*

This edition, like its predecessors, is focused on the art—and science—of critically appraising studies conducted by nurses and other health care professionals. The textbook offers guidance to students who are learning to assess research reports and to use research findings in practice.

Among the basic principles that helped to shape this and earlier editions of this book are the following:

1. Confidence in the idea that competence in doing and appraising research is critical to the nursing profession
2. A conviction that research inquiry is intellectually and professionally rewarding to nurses
3. An unswerving belief that learning about research methods need be neither intimidating nor dull

Consistent with these principles, we have tried to present research fundamentals in a way that both facilitates understanding and arouses curiosity and interest. We hope that, for some, it will arouse passion for the pursuit of research-based knowledge to guide practice.

NEW TO THIS EDITION

New Organization

A lot has happened in the world of research since the ninth edition. A particularly salient issue is patient (and other stakeholder) involvement in identifying important questions and translating research evidence into local settings. Relatedly, standard methods of appraising evidence for the **rigor** of study methods (which has been a focus of evidence-based practice, or EBP, initiatives) are being supplemented by a new emphasis on the **relevance** and **applicability** of research evidence for individual patients or small groups of patients (as espoused by the movement for **practice-based evidence** and **patient-centered research**). This new perspective led us to reorganize the content on EBP. In this edition, basic EBP concepts are woven into Chapter 1 (rather than Chapter 2). Evidence-based practice and practice-based evidence are given broader attention in the final chapter of the book, Chapter 18. We believe that this new organization will better facilitate the use of research evidence in nursing practice.

Manageable Text for One-Semester Course

We have streamlined the text even further in this edition to make it more manageable for use in a one-semester course. We reduced the length by organizing content differently and by keeping essential information in the text while moving background/advanced content to online supplements.

Enhanced Accessibility

To make this edition even more user-friendly than in the past, we have made a concerted effort to simplify the presentation of complex topics. For example, we reduced and simplified the coverage of statistical information. In addition, throughout the book we have used more straightforward, concise language.

New Content

New ideas and concepts have been threaded throughout this 10th edition. In addition to updating the book with new information on conventional research methods and recent examples of nursing studies, we have added content on the following topics:

- **Quality improvement (QI)** projects play an increasingly important role in the practice of most health care professionals. In this edition, we describe how QI projects are distinct from research studies and how they can be undertaken with rigor. The expanded content on quality improvement is found in Chapter 12.
- **Clinical significance** is a seldom mentioned but important topic that has gained prominence among researchers in other health care fields that has only recently gained traction among nurse researchers. Expanded coverage on this topic is found in Chapter 14.
- **Comparative effectiveness research (CER)**, which emphasizes patient centeredness, is an important manifestation of emerging directions in health care research. CER is discussed in Chapters 12 and 18.
- **Systematic reviews** serve as critical sources of state-of-the-art evidence for health care practitioners. We have expanded the coverage of this

topic (Chapter 17) and have introduced the **GRADE system** for evaluating reviewers' confidence in the review's conclusions.

THE TEXT

The content of this edition is as follows:

- **Part 1, Overview of Nursing Research and Its Role in Evidence-Based Practice**, introduces fundamental concepts in nursing research. Chapter 1 summarizes the background of nursing research, discusses the philosophical underpinnings of qualitative research versus quantitative research, describes major purposes of nursing research, and introduces key concepts relating to evidence-based practice. Chapter 2 introduces readers to key research terms and presents an overview of steps in the research process for both quantitative and qualitative studies. Chapter 3 focuses on research journal articles, explaining what they are and how to read them. Chapter 4 discusses ethics in nursing studies.
- **Part 2, Preliminary Steps in Quantitative and Qualitative Research**, further sets the stage for learning about the research process by considering aspects of a study's conceptualization. Chapter 5 focuses on the development of research questions and the formulation of research hypotheses. Chapter 6 discusses how to retrieve research evidence (especially in electronic bibliographic databases) and the role of research literature reviews. Chapter 7 presents information about theoretical and conceptual frameworks for nursing studies.
- **Part 3, Designs and Methods for Quantitative and Qualitative Nursing Research**, presents material on the design and conduct of all types of nursing studies. Chapter 8 describes fundamental design principles and discusses many specific aspects of quantitative research design, including efforts to enhance rigor. Chapter 9 introduces the topics of sampling and data collection in quantitative studies. Concepts relating to quality in measurements—reliability and validity—are introduced in this chapter. Chapter 10 describes the various qualitative research traditions that have contributed to the growth of constructivist

inquiry and presents the basics of qualitative design. Chapter 11 covers sampling and data collection methods used in qualitative research, describing how these differ from approaches used in quantitative studies. Chapter 12 provides an overview of several distinctive types of research, with a special emphasis on mixed methods research. This chapter also discusses other special types of research such as surveys, comparative effectiveness studies, evaluation research, and outcomes research. Methods of undertaking quality improvement projects are also described.

- **Part 4, Analysis, Interpretation, and Application of Nursing Research**, presents tools for making sense of—and using—research data. Chapter 13 reviews methods of statistical analysis. The chapter assumes no prior instruction in statistics and focuses primarily on helping readers to understand why statistics are useful, what test might be appropriate in a given situation, and what statistical information in a research article means. Chapter 14 discusses approaches to interpreting statistical results, including interpretations linked to assessments of clinical significance. Chapter 15 discusses qualitative analysis, with an emphasis on ethnographic, phenomenologic, and grounded theory studies. In this edition, we offer an expanded discussion of the coding of qualitative data. Chapter 16 elaborates on criteria for appraising trustworthiness and integrity in qualitative studies. Chapter 17 describes systematic reviews, including how to understand and appraise meta-analyses and metasyntheses—and how the GRADE system works in the context of systematic reviews. Finally, Chapter 18 describes key steps in evidence-based practice and also explains emerging ideas about how to improve EBP by striving for evidence that is more practice-based and patient-centered—that is, how to enhance the applicability of evidence to individual patients or well-defined subgroups of patients.
- At the end of the book, we offer students additional support for critical appraisal. **In the appendices, we offer full-length research articles—** two quantitative, one qualitative, and one mixed methods—that students can read, analyze, and appraise. Some of the Critical Thinking Exercises in each chapter focus on these four studies. We also have included our

critical appraisal of one of these studies (the one in Appendix D), which can be used as a model. A **glossary** at the end of the book provides additional support for those needing to look up the meaning of a methodologic term.

FEATURES OF THE TEXT

We have retained many of the classic features that were successfully used in previous editions to assist those learning to read and apply evidence from nursing research:

- **Clear, User-Friendly Style.** Our writing style is easily digestible and nonintimidating—and we have worked even harder in this edition to write clearly and simply. Concepts are introduced carefully, difficult ideas are presented thoughtfully, and readers are assumed to have no prior knowledge of technical terms.
- **Critical Appraisal Guidelines.** Each chapter includes guidelines for conducting a critical appraisal of various aspects of a research report. The guidelines sections provide a list of questions that walk students through a study, drawing attention to aspects of the study that are amenable to evaluation by research consumers.
- **Research Examples and Critical Thinking Exercises.** Each chapter concludes with summaries of one or two research examples designed to highlight important points made in the chapter and to sharpen the reader's critical thinking skills. In addition, many research examples are used to illustrate key points in the text and to stimulate students' thinking about areas of research inquiry. We have chosen many international examples to communicate to students that nursing research is growing in importance worldwide. Some of the Critical Thinking Exercises focus on the full-length articles in the four appendices.
- **Tips for Students.** The textbook is filled with practical guidance and tips on how to translate the abstract notions of research methods into more concrete applications. In these tips, we have paid special attention

to helping students *read* research reports, which are often daunting to those without specialized research training.

- **Graphics.** Colorful graphics—in the form of supportive tables, figures, and examples—reinforce the text and offer visual stimulation.
- **Chapter Objectives.** Learning objectives are identified in the chapter opener to focus students' attention on critical content.
- **Key Terms.** Each chapter opener includes a list of new research terms. In the text, new terms are defined in context (and bolded) when used for the first time; terms of lesser importance are italicized. Key terms are also defined in our glossary.
- **Bulleted Summary Points.** A succinct list of summary points that focus on salient chapter content is provided at the end of each chapter.

A COMPREHENSIVE PACKAGE FOR TEACHING AND LEARNING

To further facilitate teaching and learning, a carefully designed ancillary package has been developed to assist faculty and students.

Resources for Instructors

Tools to assist with teaching this text are available upon its adoption on thePoint® at http://thePoint.lww.com/PolitEssentials10e.

- NEW! **Test Generator Questions** are completely new and written by the book's authors for the 10th edition. Hundreds of multiple-choice questions aid instructors in assessing their students' understanding of the chapter content.
- **An Instructor's Manual** offers guidance to improve the teaching experience. We have recognized the need for strong support for instructors in teaching a course that can be quite challenging. Part of the difficulty stems from students' anxiety about the course content and their concern that research methods might not be relevant to their nursing practice. We offer numerous suggestions on how to make learning about

—and teaching—research methods more rewarding. The contents of the Instructor's Manual include the following for each chapter:

- **Statement of Intent.** Discover the authors' goals for each chapter.
- **Special Class Projects.** Find numerous ideas for interesting and meaningful class projects. Check out the icebreakers and activities relating to the Great Cookie Experiment and "How Do You Feel" icebreakers.
- **Test Questions and Answers.** True/false questions, plus important application questions, test students' comprehension and their ability to put their new appraisal skills to use. The application questions focus on a brief summary of a study and include several short-answer questions (with our answers), plus essay questions. These application questions are intended to assess students' knowledge about methodologic concepts and their critical appraisal skills.
- **Answers to Critical Thinking Exercises.** These are provided for selected questions related to the stud-ies in the appendices of the textbook.

- **Two sets of PowerPoint Slides:**
  - **"Test Yourself!" PowerPoint Slides.** For each chapter, a slide set of five multiple-choice "Test Yourself!" questions relating to key concepts in the chapter are followed by answers to the questions. (A few chapters have two sets of "Test Yourself!" slides.) The aim of these slides is not to evaluate student performance. We recommend these slides be given to students for self-testing, or they can be used in the classroom with iClicker to assess students' grasp of important concepts. To enhance the likelihood that students will see the relevance of the concepts to clinical practice, all the questions are application-type questions. We hope instructors will use the slides to clarify any misunderstandings and, just as importantly, to reward students with immediate positive feedback about newly acquired skills.
  - **PowerPoint Presentations** offer traditional summaries of key points in each chapter for use in class presentations. These slides are

available in a format that permits easy adaptation and also include audience response questions that can be used on their own or are compatible with iClicker and other audience response programs and devices.

- **An Image Bank** includes figures from the text.
- **A Sample Syllabus** is provided for a 14-week course.
- **A QSEN Map** shows how the book content integrates QSEN competencies.
- **A BSN Essentials Competencies Map** shows how the book content integrates American Association of Colleges of Nursing (AACN) Essentials of Baccalaureate Education for Professional Nursing Practice competencies.
- **Learning Management System Course Cartridges.**
- **Access to all student resources previously discussed.**

Resources for Students

An exciting set of resources is available to help students review material and become even more familiar with vital concepts. Students can access all these resources on thePoint® at http://thePoint.lww.com/PolitEssentials10e, using the codes printed on the inside front cover of their textbooks.

- **Supplements for Each Chapter** further students' exploration of specific topics. A full list of the supplements appears on page xx. These supplements can be assigned to provide additional background or to offer advanced material to meet students' specific needs.
- **Hundreds of Student Review Questions** help students to identify areas of strength and areas needing further study.
- **Answers to Critical Thinking Exercises** are provided for selected questions related to the studies in the appendices of the textbook.
- **Journal Articles**—18 full articles from Wolters Kluwer journals (one corresponding to each chapter)—are provided for additional critical appraisal opportunities. Some of these are the full journal articles for studies used as the end-of-chapter Research Examples. All journal

articles that appear on are identified in the text with and are called out in the References lists for appropriate chapters with a double asterisk (**).

- **Internet Resources with relevant and useful websites** related to chapter content can be clicked on directly without having to retype the URL and risk a typographical error. This edition also includes **links to all open-access articles cited in the textbook;** these articles are called out in the References lists for appropriate chapters with a single asterisk (*).
- **Critical Appraisal Guidelines** and **Learning Objectives** from the textbook are available in Microsoft Word for students' convenience.

STUDY GUIDE

The accompanying ***Study Guide for Essentials of Nursing Research***, 10th edition, is available for separate purchase and augments the text, providing students with opportunities to apply their learning.

- **Critical appraisal opportunities** abound in the *Study Guide*, **which includes eight research articles in their entirety**. The studies represent a range of nursing topics and research approaches, including a randomized controlled trial, a correlational/mixed methods study, an EBP project, two qualitative studies (ethnographic and grounded theory studies), a quality improvement project, a meta-analysis, and a metasynthesis. The **Application Exercises** in each chapter guide students in reading, understanding, and appraising these eight studies.
- Answers to the "Questions of Fact" section in the Application Exercises in each chapter are presented in Appendix I of the *Study Guide* so that students can get immediate feedback about their responses.
- Although critical appraisal skills are emphasized in the *Study Guide*, other included activities support students' learning of fundamental research terms and principles, such as fill-in-the-blank exercises, matching exercises, and focused study questions. Answers to those questions that have an objective answer are provided in Appendix I.

A COMPREHENSIVE, DIGITAL, INTEGRATED COURSE SOLUTION: LIPPINCOTT® COURSEPOINT

The same trusted solution, innovation, and unmatched support that you have come to expect from *Lippincott CoursePoint* is now enhanced with more engaging learning tools and deeper analytics to help prepare students for practice. This powerfully integrated, digital learning solution combines learning tools, case studies, real-time data, and the most trusted nursing education content on the market to make curriculum-wide learning more efficient and to meet students where they're at in their learning. The solution connects learning to real-life application by integrating content from *Essentials of Nursing Research* with video cases, interactive modules, and research journal articles. Ideal for active, case-based learning, this powerful solution helps students develop higher level cognitive skills and asks them to make decisions related to simple-to-complex scenarios. And now, it's easier than ever for instructors and students to use, giving them everything they need for course and curriculum success! To learn more about this solution, contact your local Wolters Kluwer representative.

Lippincott CoursePoint for Polit & Beck: Essentials of Nursing Research, 10th edition includes the following:

- **Leading Content in Context**, with digital content from *Essentials of Nursing Research*, 10th edition, is embedded in our powerful tools, engaging students and encouraging interaction and learning on a deeper level.
  - The complete interactive e-book provides students with anytime, anywhere access on multiple devices.
  - Full online access to *Stedman's Medical Dictionary for the Health Professions and Nursing* ensures students work with the best medical dictionary available.
- Engaging course content provides a variety of learning tools to engage students of all learning styles.

- A more **personalized learning approach** gives students the content and tools they need at the moment they need it, giving them data for more focused remediation and helping to boost their confidence and competence.
- **Powerful tools** help students learn the critical thinking and clinical judgment skills to help them become practice-ready nurses, including the following:
    - **Video Cases** show how nursing research and evidence-based practice relate to real-life nursing practice. By watching the videos and completing related activities, students will flex their nursing research skills and build a spirit of inquiry.

    - **Interactive Modules** help students quickly identify what they do and do not understand, so they can study smartly. With exceptional instructional design that prompts students to discover, reflect, synthesize, and apply, students actively learn. Remediation links to the digital textbook are integrated throughout.
- Unparalleled reporting provides in-depth dashboards with several data points to track student progress and help identify strengths and weaknesses.

- Unmatched support includes training coaches, product trainers, and nursing education consultants to help educators and students implement CoursePoint with ease.

CLOSING NOTE

It is our hope and expectation that the content, style, and organization of this 10th edition of *Essentials of Nursing Research* will be helpful to those students who want to become skillful, thoughtful readers of nursing studies and to those wishing to enhance their clinical performance based on research findings. We also hope that this textbook will help to develop an enthusiasm for the kinds of discoveries and knowledge that research can produce.

Denise F. Polit, PhD, FAAN
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USER'S
GUIDE

Learning Objectives focus students' attention on critical content →

Key Terms alert students to important terminology →

Examples help students apply content to real-life research →

Tip boxes describe what is found in actual research articles →

How-to-Tell Tip boxes explain confusing issues in actual research articles →

Learning Objectives

On completing this chapter, you will be able to:

- Describe the logic of sampling for qualitative studies
- Identify and describe several types of sampling approaches in qualitative studies
- Evaluate the appropriateness of the sampling method and sample size used in a qualitative study
- Identify and describe methods of collecting unstructured self-report data
- Identify and describe methods of collecting and recording unstructured observational data
- Critically appraise a qualitative researcher's decisions regarding the data collection plan
- Define new terms in the chapter

Key Terms

- Data saturation
- Diary
- Field notes
- Focus group interview
- Key informant
- Log
- Maximum variation sampling
- Participant observation
- Photo elicitation
- Photovoice
- Purposive (purposeful) sampling
- Semi-structured interview
- Snowball sampling
- Theoretical sampling
- Topic guide
- Unstructured interview

Example of a convergent design

Kalanlar and Kuru Alici (2020) used a convergent design to study the effect of care burden on formal caregivers' quality of work life. Structured questionnaires were used to obtain quantitative data about the key constructs. In-depth interviews were also undertaken with some caregivers, who were asked such questions as, "What are the most challenging situations while giving care?" and "How does your care burden affect your home life?"

TIP When a quantitative study is based on a theory or model, the research article typically states this fact early—often in the abstract or the title. Some reports also have a subsection of the introduction called "Theoretical Framework." The report usually includes a brief overview of the theory so that all readers can understand, in a broad way, the conceptual context of the study.

HOW-TO-TELL TIP How can you tell if a study is experimental? Researchers usually indicate in the method section of their reports that they used an experimental or randomized design (RCT). If such terms are missing, you can conclude that a study is experimental if the article says that the study purpose was to *test the effects of* an intervention AND if participants were put into groups at random.

Critical Appraisal Guidelines boxes lead students through key issues in a research article →

Box 9.1 Guidelines for Critically Appraising Quantitative Sampling Plans

1. Was the population identified? Were eligibility criteria specified?
2. What type of sampling design was used? Was the sampling plan one that could be expected to yield a representative sample?
3. How many participants were in the sample? Was the sample size affected by high rates of refusals or attrition? Was the sample size large enough to support statistical conclusion validity? Was the sample size justified on the basis of a power analysis or other rationale?
4. Were key characteristics of the sample described (e.g., mean age, percentage of female)?
5. To whom can the study results reasonably be generalized?

Research Examples highlight critical points made in the chapter and sharpen critical thinking skills →

RESEARCH EXAMPLES WITH CRITICAL THINKING EXERCISES

This section presents an example of a study that described its theoretical links. Read the summary and then answer the critical thinking questions, referring to the full research report if necessary. Answers to the questions for Exercise 1 are available to instructors on thePoint®. The critical thinking questions for Exercises 2 and 3 are based on the studies that appear in their entirety in Appendices A and B of this book. Our comments for these exercises are in the Student Resources section on thePoint®.

EXAMPLE 1: SOCIAL COGNITIVE THEORY IN A QUANTITATIVE STUDY

Study: Predicting engagement with online walking promotion among metropolitan and rural cancer survivors (Frensham et al., 2020)

Statement of Purpose: The purpose of the study was to evaluate the effectiveness of a 12-week online intervention (Steps Toward Improving Diet and Exercise or STRIDE) that was designed to promote walking and other health-promoting behaviors among cancer survivors living in rural and urban areas of Australia.

Critical Thinking Exercises provide opportunities to practice critically appraising research articles →

Critical Thinking Exercises

1. Answer the relevant questions from Box 7.1 regarding this study.
2. Also consider the following targeted question: Is there another model or theory that was described in this chapter that could have been used to study the effect of this intervention?
3. If the results of this study are valid and generalizable, what might be some of the uses to which the findings could be put in clinical practice?

Summary Points review chapter content to ensure success →

Special icons alert students to important content found on thePoint® and in the accompanying Study

Summary Points

- A **research problem** is a perplexing or troubling situation that a researcher wants to address through disciplined inquiry.
- Researchers usually identify a broad *topic*, narrow the scope of the problem, and then identify research questions consistent with a paradigm of choice.
- Researchers communicate their aims in research articles as problem statements, statements of purpose, research questions, or hypotheses.
- A **problem statement** articulates the problem and an *argument* that explains the need for a study. Problem statements typically include several components: problem identification; background, scope, and consequences of the problem; knowledge gaps; and possible so-

concepts (variables) and the study group or population. Purpose statements often communicate, through the choice of verbs and other key terms, aspects of the study design, or the research tradition.

- **Research questions** are the specific queries researchers want to answer in addressing the research problem.
- A **hypothesis** states predicted relationships between two or more variables—that is, the anticipated association between independent and dependent variables.
- **Directional hypotheses** predict the direction of a relationship; **nondirectional hypotheses** predict the existence of relationships, not their direction.
- **Research hypotheses** predict the existence of relationships; **null hypotheses**, which express the absence of relationships, are the hypotheses subjected to statistical testing.
- Hypotheses are never proved or disproved—

accompanying Study Guide

lutions to the problem.

- A **statement of purpose**, which summarizes the overall study goal, identifies the key

they are accepted or rejected, supported or not supported by the data.

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PART 1

Overview of Nursing Research and Its Role in Evidence-Based Practice

1 Overview of Nursing Research and Its Role in Evidence-Based Practice

Learning Objectives

On completing this chapter, you will be able to:

- Describe why research is important in nursing and discuss the importance of evidence-based practice
- Describe broad historical trends and future directions in nursing research
- Describe alternative sources of evidence for nursing practice
- Describe major characteristics of the positivist and constructivist paradigm and discuss similarities and differences between the traditional scientific method (quantitative research) and constructivist methods (qualitative research)
- Identify several purposes of qualitative and quantitative nursing research
- Understand sources of information for evidence-based practice
- Describe evidence hierarchies and level of evidence scales
- Identify a well-worded clinical question for evidence-based practice
- Define new terms in the chapter

Key Terms

- Applicability
- Assumption
- Cause-probing research
- Clinical nursing research
- Clinical significance
- Constructivist paradigm
- Empirical evidence
- Evidence-based practice
- Evidence hierarchy
- Generalizability
- Journal club
- Level of evidence scale
- Meta-aggregation
- Meta-analysis
- Metasynthesis
- Mixed methods research
- Mixed studies review

- Nursing research
- Paradigm
- Patient centeredness
- PICO format
- Positivist paradigm
- Primary study
- Qualitative research
- Quantitative research
- Research
- Research methods
- Scientific method
- Systematic review

NURSING RESEARCH IN PERSPECTIVE

We know that most readers are not reading this book because they plan to become nurse researchers. Yet, we are confident that many of you *will* participate in research-related activities during your careers, and virtually all of you will be expected to be research-savvy at a basic level. We hope that you will come to see the value of nursing research and will be inspired by the efforts of the thousands of nurse researchers now working worldwide to improve patient care. You are embarking on a lifelong voyage in which research will play a role. We hope to help you enjoy the journey.

What Is Nursing Research?

Research is systematic inquiry that relies on disciplined methods to answer questions and solve problems. The ultimate goal of research is to gain knowledge that can benefit many people. **Nursing research** is systematic inquiry designed to develop evidence about issues of importance to nurses and their clients. Nurses undertake research to address problems relating to nursing education and nursing administration, but in this book, we emphasize **clinical nursing research**—that is, research designed to guide nursing practice and to improve the health and quality of life of nurses' clients. Clinical nursing research typically begins with questions stemming from practice problems—problems you may have already encountered.

Examples of nursing research questions

- Does a massage intervention reduce post-operative pain in infants with complex congenital heart disease? (Harrison et al., 2020)
- What is it like to cope with the fear of cancer recurrence among ovarian cancer survivors? (Galica et al., 2020)

TIP You may think that research is too abstract to have a bearing on patient care. But nursing research focuses on *real* people with *real* problems, and studying those problems offers opportunities to address them through improvements to nursing care.

The Importance of Research to Evidence-Based Nursing

Nursing has experienced profound changes in the past few decades. Nurses are increasingly expected to understand research and to base their practice on evidence from research—that is, to adopt an **evidence-based practice (EBP)**. EBP involves using the best evidence in making patient care decisions, and such evidence typically comes from research conducted by nurses and other health care professionals. Nurse leaders recognize the need to base specific nursing decisions on evidence indicating that the decisions are clinically appropriate, resulting in positive client outcomes, as well as cost-effective. We discuss EBP in greater detail later in this chapter.

In some countries, research plays a role in nursing credentialing and status. For example, the American Nurses Credentialing Center—an arm of the American Nurses Association—has developed a Magnet Recognition Program to recognize health care organizations that provide high-quality nursing care. To achieve Magnet status, practice environments must demonstrate a sustained commitment to EBP; the 2019 Magnet application manual incorporated revisions that strengthen evidence-based requirements. Changes to nursing practice are happening every day because of EBP efforts.

Example of evidence-based practice

Many 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), but before 2000, only a minority of NICUs offered kangaroo care options. Expanded adoption of this practice resulted from mounting evidence that early skin-to-skin contact has clinical benefits without negative side effects. Some of that evidence came from rigorous studies conducted by nurse researchers (e.g., Bastani et al., 2017; Billner-Garcia et al., 2018; Cho et al., 2016; Lowson et al., 2015; Xie et al., 2020).

Roles of Nurses in Research

Most nurses are likely to engage in one or more activity along a continuum of research participation. At one end of the continuum are *consumers of nursing research*—nurses who read research reports to keep up-to-date on findings that may affect their practice. EBP depends on well-informed nursing research consumers.

At the other end of the continuum are the *producers of nursing research*—nurses who actively undertake studies. Research is increasingly being conducted by practicing nurses who want to find what works best for their clients.

Between these two end points on the continuum lie a variety of research activities in which nurses engage. Even if you never carry out a study, you may do one of the following:

1. Contribute an idea for a study.
2. Gather information from those taking part in a study.

3. Advise clients about participating in a study.
4. Search for research evidence to address a practice problem.
5. Discuss the implications of a study in a **journal club** in your practice setting, which involves meetings (in groups or online) to discuss research articles.

In all these possible research-related activities, nurses who have some research skills are better able than those without them to make a contribution to nursing and to EBP.

Nursing Research: Past and Present

Most people agree that research in nursing began with Florence Nightingale in the 1850s. Based on her skillful analysis of factors affecting soldier mortality and morbidity during the Crimean War, she was successful in bringing about changes in nursing care and in public health. After Nightingale's work, however, research disappeared from the nursing literature until the early 1900s, but most studies at that time concerned nurses' education.

In the 1950s, research by nurses began to accelerate. Increased numbers of nurses with advanced degrees, the growth in research funding, and the establishment of the journal *Nursing Research* helped to propel nursing research at mid-20th century. During the 1960s, practice-oriented research began to emerge, and research-oriented journals started publication in several countries. During the 1970s, there was a change in research emphasis from areas such as teaching and nurses' characteristics to improvements in client care. Nurses also began to pay attention to the utilization of research findings in nursing practice.

In 1986, the National Center for Nursing Research (NCNR) was established at the National Institutes of Health (NIH) in the United States. A key purpose of NCNR was to promote and financially support research relating to patient care. In 1993, nursing research was strengthened when NCNR was promoted to full institute status within the NIH: The *National Institute of Nursing Research* (NINR) was created. NINR helped put nursing research into the mainstream of activities enjoyed by other health disciplines. Funding opportunities for nursing research also expanded in other countries. The 1990s witnessed the birth of several more journals for nurse researchers.

TIP For those interested in learning more about the history of nursing research, we offer an expanded summary in the supplement to this chapter on thePoint® website.

Current and Future Directions for Nursing Research

Nursing research continues to develop at a rapid pace and will undoubtedly flourish throughout the 21st century as research findings grow. In 1986, NCNR had a budget of $16 million, whereas NINR funding in fiscal year 2020 was approximately $170 million. Among the trends we foresee for the near future are the following:

- *Continued focus on EBP*. Nurses' use of research findings in their practice will continue to be encouraged. This means that improvements will be needed in nurses' skills in locating, understanding, critically appraising, and using relevant study results.
- *Ongoing growth of research syntheses*. Systematic reviews, which are a cornerstone of EBP, rigorously integrate research information on a topic so that conclusions about the state of evidence can be reached.
- *Increased emphasis on patient centeredness*. **Patient centeredness** has become a central concern in health care and in research. Efforts are increasing to ensure that research is relevant to patients and that patients play a role in setting research priorities.
- *Relatedly, greater interest in the **applicability** of research*. More attention is being paid to figuring out how study results can be applied to individual patients or subgroups of patients. A limitation of the current EBP model is that evidence typically is based on the *average effects* of health care interventions implemented under ideal circumstances.

- *Expanded local research and quality improvement efforts in health care settings*. Small studies designed to solve local problems are increasing. This trend will be reinforced as more hospitals apply for (and are recertified for) Magnet status in the United States and other countries. Mechanisms are being developed to ensure that evidence from local projects becomes available to others facing similar problems.
- *Increased focus on health disparities*. Health disparities continue to be a crucially important concern, and this in turn has raised consciousness about the cultural sensitivity of health interventions. Research (and health care more generally) must be sensitive to the beliefs, life experiences, barriers, and values of racially, culturally, and linguistically diverse populations.
- *Growing interest in defining and ascertaining* ***clinical significance***. Research findings increasingly must meet the test of being clinically significant, and patients have taken center stage in efforts to define clinical significance.

What are nurse researchers likely to be studying in the future? Although there is tremendous diversity in research interests, research priorities have been articulated by NINR, Sigma Theta Tau International, and other nursing organizations. For example, the primary areas of interest articulated in the 2016 NINR strategic plan were the following:

- Symptom science: promoting personalized health strategies
- Wellness: promoting health and preventing disease
- Self-management: improving quality of life for individuals with chronic illness
- End-of-life and palliative care: the science of compassion

TIP All websites cited in this chapter, plus additional websites with useful content relating to the foundations of nursing research, are in the Internet Resources on thePoint® website. This will allow you to simply use the "Control/Click" feature to go directly to the website, without having to type in the URL and risk a typographical error. Websites corresponding to the content of all chapters of the book are on thePoint®.

KNOWLEDGE SOURCES FOR NURSING PRACTICE

Nurses make clinical decisions based on a large repertoire of knowledge. As a nursing student, you are gaining skills in nursing practice from your instructors, textbooks, and clinical placements. When you become a registered nurse (RN), you will continue to learn from other nurses and health care professionals. Because evidence is constantly evolving, learning about best-practice nursing will be an ongoing quest throughout your career.

Some of what you have learned thus far is based on systematic research, but much of it is not. Where does knowledge for nursing practice come from? Until fairly recently, knowledge was based primarily on clinical experience, trial and error, tradition, and expert opinion. These alternative sources of knowledge are different from research-based information.

Tradition and "Experts"

Some nursing decisions are based on untested traditions and "unit culture" rather than on sound evidence. One analysis suggested that some "sacred cows" (ineffective customs) persist even in a health care center recognized as a leader in EBP (Hanrahan et al., 2015). Another common source of knowledge is an authority, a person with specialized expertise. Reliance on experts (such as nursing faculty, mentors, or textbook authors) is unavoidable. Experts, however, are not infallible—particularly if their expertise is based primarily on personal experience or outdated information; yet, their knowledge is often unchallenged.

TIP The consequences of *not* using research-based evidence can be devastating. For example, from 1956 through the 1980s, Dr. Benjamin Spock published several editions of *Baby and Child Care*, a parental guide that sold over 19 million copies worldwide. Dr. Spock wrote the following advice: "I

think it is preferable to accustom a baby to sleeping on his stomach from the beginning if he is willing" (Spock, 1979, p. 164). Research has demonstrated that this sleeping position is associated with heightened risk of sudden infant death syndrome (SIDS). In their systematic review of evidence, Gilbert and colleagues (2005) wrote, "Advice to put infants to sleep on the front for nearly half a century was contrary to evidence from 1970 that this was likely to be harmful" (p. 874). They estimated that if medical advice had been guided by research evidence, over 60,000 infant deaths might have been prevented.

Clinical Experience and Trial and Error

Clinical experience is a functional source of knowledge—indeed, it is a component of the EBP model. Yet, personal experience has limitations as a source of evidence for practice because each nurse's experience is too narrow to be generally useful, and personal experiences are often colored by biases. Trial and error—alternatives tried successively until a solution to a problem is found—can be practical but the method tends to be haphazard and solutions may be idiosyncratic.

Disciplined Research

Disciplined research is considered the best method of acquiring reliable knowledge. Evidence-based health care compels nurses to base their clinical practice to the extent possible on rigorous research-based findings rather than on tradition, authority, or personal experience—although nursing will always remain a rich blend of art and science.

PARADIGMS AND METHODS FOR NURSING RESEARCH

The questions that nurse researchers ask, and the strategies they use to answer their questions, spring from a researcher's view of how the world "works." In research parlance, a **paradigm** is a worldview, a general perspective on the world's complexities.

Disciplined inquiry in nursing has been conducted mainly within two paradigms. The paradigm that dominated nursing research for decades is called the **positivist paradigm**. Positivism, rooted in 19th century thought, is a reflection of a broad cultural movement that emphasizes the rational and scientific. The **constructivist paradigm** (sometimes called the *naturalistic paradigm*) began as a countermovement to positivism and is a major alternative system for conducting research in nursing.

This section describes the two paradigms and outlines the research methods associated with them. **Research methods** are the techniques researchers use to structure a study and to gather and analyze relevant information. The two paradigms are associated with different methods of developing evidence.

The Positivist Paradigm

An **assumption** is a principle that is believed to be true without verification. Paradigms are associated with a set of assumptions that have implications for the kinds of research questions that researchers ask and the methods they use to answer them.

Worldview of the Positivist Paradigm

A fundamental assumption of positivists is that there is a reality *out there* that can be studied and known. Positivists assume that nature is ordered and regular, and that a reality exists independent of human observation. The assumption of *determinism* refers to the positivists' belief that phenomena are not haphazard but rather have antecedent causes. Within the positivist paradigm, research activity is often aimed at understanding the underlying causes of natural phenomena. Because of their belief in a factual reality, positivists prize objectivity. Their