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*LoBiondo-Wood and Haber's*

# NURSING RESEARCH IN CANADA

METHODS, CRITICAL APPRAISAL, AND UTILIZATION



6<sup>th</sup>  
EDITION



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*LoBiondo-Wood and Haber's*

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*LoBiondo-Wood and Haber's*

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EDITION

# NURSING RESEARCH IN CANADA

METHODS, CRITICAL APPRAISAL, AND UTILIZATION

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**Ramesh Venkatesa Perumal**

*To all the nursing students  
whose curiosity and dedication inspire me  
to make learning joyful,  
and to my brother, Mike.*

**Karen Campbell**

# Preface

**THE FOUNDATION OF THE SIXTH EDITION** of *LoBiondo-Wood and Haber's Nursing Research in Canada: Methods, Critical Appraisal, and Utilization* continues to be the belief that nursing research is integral to all levels of nursing education and practice. Since the first edition of this textbook, the depth and breadth of nursing research have continued to expand. A growing number of nurses are conducting research and using research evidence to shape clinical practice, education, administration, and health policy.

The Canadian Nurses Association promotes the notion that nurses must provide care based on the best available scientific evidence. Meeting this challenge is both exciting and essential. Nurses are now combining the best available evidence with clinical judgement and patient preferences to influence the direction of health care delivery and to document outcomes related to the quality and cost-effectiveness of patient care. As nurses continue to build a unique body of knowledge through research, clinical decision making will become increasingly evidence informed.

As editors, we believe that all nurses not only need to understand the research process but also must be able to critically read, evaluate, and apply research findings in practice. We recognize that understanding research, as a component of evidence-informed practice, can be challenging for students, but we are committed to presenting this topic in a stimulating, lively, and learner-friendly manner.

Consistent with this perspective is our commitment to advancing implementation of evidence-informed practice. Understanding and applying nursing research must be an integral dimension of

nursing education—not only in undergraduate nursing research courses but also throughout the curriculum. The research role of nurses calls for evidence-informed practice competencies; central to these are critical appraisal skills, which enable nurses to use research effectively.

Preparing students for this role involves developing their critical thinking and reading skills, thereby enhancing their understanding of the research process and their ability to appraise research critically. An undergraduate course in nursing research should develop this foundational competence, which is essential for engaging in evidence-informed clinical decision making. By contrast, graduate-level courses place greater emphasis on conducting research, as well as on understanding and appraising it.

The primary audience for this textbook remains undergraduate students who are learning the steps of the research process, developing clinical questions, critically appraising published literature, and using research findings for evidence-informed clinical practice. This book is also a valuable resource for master's and doctoral students who want a concise review of the research process, the critical appraisal process, and the principles and tools for evidence-informed practice.

Health care leaders will also find this text useful as they prepare to lead evidence-informed initiatives in clinical settings. Practising nurses may use it to strengthen their ability to base decisions on research evidence when developing evidence-informed policies, protocols, and standards—rather than rely on tradition, authority, or trial and error. In addition, this text supports nurses who

collaborate with nurse-scientists in the conduct of clinical research and evidence-informed practice.

Building on the success of previous editions, we maintain our commitment to introducing evidence-informed practice and research principles to baccalaureate students, thereby providing a cutting-edge foundation for their clinical practice as knowledgeable research consumers.

We also recognize that knowledge and language concerning sex, gender, and identity are fluid and continually evolving. The terminology in this text endeavours to be inclusive and reflects, to the best of our knowledge, current understandings at the time of publication.

*LoBiondo-Wood and Haber's Nursing Research in Canada: Methods, Critical Appraisal, and Utilization* prepares nursing students and practising nurses to become knowledgeable consumers of nursing research in the following ways:

- Addressing the evidence-informed practice role of the nurse, embedding evidence-informed competence in the clinical practice of every baccalaureate graduate
- Demystifying research, which is sometimes perceived as overly complex
- Using an evidence-informed approach to teaching the fundamentals of the research process
- Presenting the critical appraisal process in a user-friendly, logical, and systematic way
- Promoting a lively spirit of inquiry that fosters critical thinking and critical reading skills
- Developing information literacy, searching, and evidence-informed practice competencies so that nurses can effectively locate and evaluate the best available research evidence
- Elevating the importance of critical appraisal and research appreciation to a level comparable to that of producing research. Before students can become research producers, they must first become knowledgeable research consumers.
- Emphasizing evidence-informed practice as the basis for clinical decision making and nursing interventions, thereby demonstrating the quality and cost-effectiveness of nursing care delivery
- Providing numerous examples of recently published research that illustrate abstract concepts and bring them to life for students new to the research and critical appraisal process
- Reinforcing evidence-informed concepts through examples directly linked to the research and critiquing process
- Showcasing, in **Research Vignettes**, the work of renowned nurse researchers whose careers exemplify the links among research, education, and practice
- Offering extensive pedagogical chapter features, including **Learning Outcomes**, **Key Terms**, **Key Points**, new **Critical Thinking Challenges**, **Research Hints**, **Evidence-Informed Practice Tips**, new **Practical Applications**, revised **Critical Thinking Decision Paths**, and **Critical Judgement Questions**, as well as numerous tables, boxes, and figures. Each chapter that presents a step of the research process concludes with a section titled **Appraising the Evidence**, which reviews how that step should be evaluated from a consumer's perspective, accompanied by an updated **Critiquing Criteria** box
- Providing a **Study Guide** that promotes active learning and assimilation of research content
- Offering an Evolve site with instructor resources (Test Bank, TEACH for Nurses Lesson Plans, PowerPoint slides, critiquing exercises, image collection, and critical appraisal activities) and student resources (audio glossary and interactive supports)

The sixth edition of *LoBiondo-Wood and Haber's Nursing Research in Canada: Methods, Critical Appraisal, and Utilization* is organized into seven parts. Each part is preceded by an introductory section and opens with an engaging **Research Vignette** by a distinguished nurse researcher.

**Part One, Research Overview**, consists of six chapters. Chapter 1, “The Role of Research in Nursing,” provides an overview of research and evidence-informed practice processes that shape clinical practice. It introduces the role of research in practice and education, the roles of nurses in research activities, a historical perspective, and future directions. The style and content are designed to make subsequent chapters more accessible. Chapter 2, “Theoretical Frameworks,” examines how theoretical frameworks guide and inform knowledge generation through the research process. Chapter 3, “Critical Appraisal Strategies: Reading Research,” addresses students directly, highlighting critical thinking and reading strategies that facilitate understanding of the research process and its relationship to critical appraisal. This chapter introduces the hierarchy of evidence used throughout the text.

The next two chapters address foundational components of the research process. Chapter 4, “Developing Research Questions, Hypotheses, and Clinical Questions,” focuses on how research questions, hypotheses, and evidence-informed practice questions are derived, operationalized, and appraised. Clinical examples illustrate different types of questions and hypotheses. Students also learn how to develop clinical questions that guide evidence-informed inquiry. Chapter 5, “Searching and Appraising the Literature,” presents cutting-edge content on information literacy. It equips students and nurses with the tools to search, retrieve, manage, and evaluate research effectively. The chapter also develops competencies for critically reading, understanding, and appraising a study’s literature review and framework. The final chapter in this section, Chapter 6, “Legal and Ethical Issues,” provides an overview of legal and ethical issues facing researchers in Canada.

**Part Two, Indigenous Peoples: Research, Knowledges, and Ways of Knowing**, continues to be a vital and evolving section. We are honoured

to share the wisdom of Kate Dunn and recognize the contributions of Caroline Foster-Boucher in developing Chapter 7. This chapter deepens students’ understanding of the historical and ongoing impacts of colonization on Indigenous peoples, particularly in the context of nursing and health research. It highlights the continued relevance of the Truth and Reconciliation Commission’s *Calls to Action* and expands the discussion of Indigenous methodologies, offering students a respectful and meaningful entry point into Indigenous ways of knowing and being in research.

**Part Three, Qualitative Research**, features two chapters that provide a comprehensive foundation in qualitative inquiry. Chapter 8, “Introduction to Qualitative Research,” offers a clear framework for understanding qualitative research designs and literature, emphasizing the critical role qualitative inquiry plays in evidence-informed practice. Chapter 9, “Qualitative Approaches to Research,” presents and illustrates major qualitative methods, with updated examples from the literature. This chapter now broadens the focus to include not only traditional qualitative designs but also those frequently used in applied health research. It highlights the types of questions best addressed through qualitative methods and supports students in recognizing the value of qualitative inquiry across diverse health contexts.

**Part Four, Quantitative Research**, contains Chapter 10 (“Introduction to Quantitative Research”), Chapter 11 (“Experimental and Quasiexperimental Designs”), and Chapter 12 (“Nonexperimental Designs”). These chapters delineate the essential steps of the quantitative research process, with current clinical studies used to illustrate each step. The links between the steps and their role in the overall research process are emphasized.

**Part Five, Processes Related to Research**, addresses the specific steps of the research

process in both qualitative and quantitative studies. These chapters reinforce the link between evidence-informed practice and critical appraisal of each research step. Students learn how to select participants (Chapter 13, “Sampling”), gather data (Chapter 14, “Data Collection Methods”), analyze the results (Chapter 16, “Qualitative Data Analysis,” and Chapter 17, “Quantitative Data Analysis”), and present their results (Chapter 18, “Presenting the Findings”). Chapter 15, “Rigour in Research,” gives students the tools for assessing a study’s quality and trustworthiness.

**Part Six, Critiquing Research,** teaches students how to critically appraise studies by linking evidence-informed practice to research critique. Each chapter contains two critiques of published research (Chapter 19, “Critiquing Qualitative Research,” and Chapter 20, “Critiquing Quantitative Research”). Emphasis is placed on identifying the strengths and weaknesses of published research, helping students develop balanced appraisal skills.

**Part Seven, Application of Research: Evidence-Informed Practice,** contains the final chapter in the book. Chapter 21, “Developing an Evidence-Informed Practice,” provides a dynamic review of evidence-informed models that can be applied step by step—at organizational or individual patient levels—as frameworks for implementing and evaluating evidence-informed health care.

The development and refinement of an evidence-informed foundation for nursing practice is an essential priority for the future of professional nursing practice. The sixth edition of *LoBiondo-Wood and Haber’s Nursing Research in Canada: Methods, Critical Appraisal, and Utilization* is designed to help students develop the competence needed to critically analyze research studies, evaluate their merit, and judiciously apply evidence in practice. By achieving this goal, the book will equip the next generation

of nurses to combine research evidence, theory, and clinical judgement to meet the health care needs of patients and families in both health and illness.

## EVOLVE RESOURCES

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The Evolve website for this book provides materials for both students and faculty and is available at <http://evolve.elsevier.com/Canada/LoBiondo/research/>.

### For Students

- Audio Glossary
- Review Questions
- RN Clinical Judgement Case Studies

### For Instructors

- TEACH for Nurses Lesson Plans
- Image Collection
- PowerPoint Lecture Slides
- Test Bank
- Critical Appraisal Activities
- Critiquing Exercises/Quizzes
- Conversion Guide
- RN Clinical Judgement Case Studies for Nursing Research in Canada

## NEXT GENERATION NCLEX® (NGN)

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The National Council of State Boards of Nursing (NCSBN) is a not-for-profit organization whose members include nursing regulatory bodies. In empowering and supporting nursing regulators in their mandate to protect the public, the NCSBN is involved in the development of nursing licensure examinations, such as the NCLEX-RN®. In Canada, the NCLEX-RN was introduced in 2015 and is, as of the writing of this text, the recognized licensure exam required for practising registered nurses (RNs) in Canada.

The NCLEX-RN changed, as of 2023, in order to ensure that its item types adequately measure clinical judgement, critical thinking, and problem-solving skills on a consistent basis. The NCSBN

incorporated into the examination what they call the Clinical Judgement Measurement Model (CJMM), which is a framework that the NCSBN has created to measure a novice nurse's ability to apply clinical judgement in practice.

These changes to the examination come as a result of research findings indicating that novice nurses have a much higher than desirable error rate with patients (i.e., errors that cause patient harm) and, upon NCSBN's investigation, that the overwhelming majority of these errors were caused by failures of clinical judgement.

Clinical judgement has been a foundation of nursing education for decades, based on the work of a number of nursing theorists. The theory of clinical judgement that most closely aligns with what the NCSBN is basing their CJMM on is the work of Christine A. Tanner.

The new version of the NCLEX-RN is loosely identified as the Next Generation NCLEX, or NGN, and features the following:

- Six key skills in the CJMM: recognizing cues, analyzing cues, prioritizing hypotheses, generating solutions, taking actions, and evaluating outcomes
- Approved item types as of March 2021: multiple response, extended drag-and-drop, cloze (drop-down), enhanced hot-spot (highlighting), matrix/grid, bow tie, and trend. More question types may be added
- All new item types are accompanied by mini-case studies with comprehensive patient information—some of it relevant to the question, and some of it not
- Case information may present a single, unchanging moment in time (a “single-episode” case study) or multiple moments in time as a patient's condition changes (an “unfolding” case study)
- Single-episode case studies may be accompanied by one to six questions; unfolding case studies are accompanied by six questions

For more information (and detail) regarding the NCLEX-RN and changes coming to the exam,

visit the NCSBN's website (<https://www.ncsbn.org/11447.htm>) and [https://ncsbn.org/Building\\_a\\_Method\\_for\\_Writing\\_Clinical\\_Judgment\\_It.pdf](https://ncsbn.org/Building_a_Method_for_Writing_Clinical_Judgment_It.pdf).

For further NCLEX-RN examination preparation resources, see *Elsevier's Canadian Comprehensive Review for the NCLEX-RN® Examination*, Third Edition, ISBN 9780323810333, and *Elsevier's Case Study Practice Review for the Next Generation NCLEX (NGN)®*, ISBN 9780443122941.

Prior to preparing for any nursing licensure examination, nursing students should refer to their provincial or territorial nursing regulatory body to determine which licensure examination is required in order for you to practise in your chosen jurisdiction.

## A NOTE ON TERMINOLOGY

The authors and contributors of the text recognize and acknowledge the diverse histories of the First Peoples of the lands now referred to as Canada. It is recognized that individual communities identify themselves in various ways; within this text, the term Indigenous will be used to refer to all First Nations, Inuit, and Métis people within Canada, unless there are research findings that are presented uniquely to a population.

In the text, gender-neutral language is used, to be respectful of and consistent with the values of equality recognized in the Canadian Charter of Rights and Freedoms. Using gender-neutral language is professionally responsible and mandated by the Canadian Federal Plan for Gender Equality. The authors recognize that knowledge and language concerning sex, gender, and identity are fluid and continually evolving. The language and terminology presented in this text endeavour to be inclusive of all people and reflect what is, to the best of our knowledge, current at the time of publication.

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**Mina D. Singh**

**Ramesh Venkatesa Perumal**

**Karen Campbell**

# To the Student

**EVIDENCE-INFORMED PRACTICE** is integral to meeting the challenge of providing quality health care in partnership with patients, their families and significant others, and the communities in which they live. As you read this sixth edition of *LoBiondo-Wood and Haber's Nursing Research in Canada: Methods, Critical Appraisal, and Utilization*, we hope you develop an appreciation of the importance of nursing research to practice. Whether you are a student or a practising nurse aiming to use research evidence as the foundation of your practice, you will discover that nursing research—and a commitment to evidence-informed practice—positions our profession at the forefront of change. As you learn about nursing research and evidence-informed practice, you will develop knowledge and skills that will equip you for clinical practice today and into the future.

The sixth edition of *LoBiondo-Wood and Haber's Nursing Research in Canada: Methods, Critical Appraisal, and Utilization* reflects cutting-edge trends in developing evidence-informed nursing practice. Its seven-part organization and special features are designed to help you build

critical thinking, critical reading, information literacy, and evidence-informed decision-making skills while presenting content in a learner-friendly way. These features expand your competence and confidence in applying new knowledge to challenging situations. The companion Study Guide, with its chapter-by-chapter activities, provides a self-paced tool to reinforce learning, while the accompanying Evolve website offers review materials to consolidate concepts discussed throughout the text.

Evidence-informed practice skills are used in every clinical setting and apply to all patient populations and nursing practice issues. Whether your practice involves primary care or specialty care, inpatient or outpatient treatment, or hospital, clinic, or home settings, you will be challenged to use research as the basis for your evidence-informed practice. The sixth edition of *LoBiondo-Wood and Haber's Nursing Research in Canada: Methods Critical Appraisal, and Utilization* will guide you in discovering your ability to play a vital role in building an evidence-informed professional nursing practice.

## Research Overview

- 1** The Role of Research in Nursing
- 2** Theoretical Frameworks
- 3** Critical Appraisal Strategies:  
Reading Research
- 4** Developing Research Questions, Hypotheses, and Clinical Questions
- 5** Searching and Appraising the Literature
- 6** Legal and Ethical Issues

## RESEARCH VIGNETTE

### *Using Big Data Analytics to Address Big Problems in Health*

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Homelessness is a complex and pressing issue in Canada with significant societal and health impacts. Without access to safe and stable housing, individuals face substantially reduced opportunities to achieve and maintain health and wellness. At the same time, over the past two decades, an opioid toxicity epidemic—driven by the widespread availability of synthetic opioids such as fentanyl—has claimed, and continues to claim, thousands of lives across the country. Exploring the intersections of homelessness and opioid toxicity is a critical focus for public and population health practice.

Accurate statistics on the number of people experiencing homelessness (PEH) at any given time are difficult to capture, and the association between homelessness and opioid overdose deaths represents an urgent policy and practice question. To provide contemporary insights into this issue, we conducted a population-level time-trend analysis in Ontario. This analysis calculated the number of individuals

experiencing homelessness at the time of accidental opioid overdose death and compared these findings with a general population comparator group in Ontario (Booth et al., 2024).

This study used multiple linked health and social data sets available through ICES (formerly referred to as the Institute for Clinical Evaluative Sciences), an independent, nonprofit research institute in Ontario. Authorized under section 45 of Ontario's *Personal Health Information Protection Act*, 2004, ICES is permitted to collect personal health information without consent for purposes such as analysis, evaluation, monitoring, and planning related to the health system. This unique position allows ICES to conduct population-level inquiries into various health and health-related issues by securely linking administrative data from health care interactions (e.g., diagnostic codes, billing codes) within the province of Ontario while ensuring individual privacy. In the Booth et al. (2024) study, data held at ICES—including newly linked coroner records—were used to produce both descriptive and inferential analyses of accidental opioid-related overdose deaths.

Over the 5-year study period (2017–2021), 884 PEH died of accidental opioid overdose, compared with 5,760 individuals who were not experiencing homelessness at the time of death. In 2017, PEH accounted for roughly 1 in 14 accidental opioid-related overdose deaths in Ontario; by 2021, this proportion had increased to 1 in 6. When factoring in individuals who had experienced homelessness in the year prior to death (e.g., in 2020), the 2021 proportion doubled to one in three deaths. Other notable findings included that most PEH were not alone at the time of death (55.8%), 61.7% had resuscitation attempted, and 41.2% received naloxone.

These findings highlight opportunities for nurses to advocate for policy and practice changes to support PEH and other vulnerable populations at risk of opioid-related overdose. Potential areas for advocacy include expanding to community-based harm reduction initiatives (e.g., safer opioid supply services, drug-checking programs, supervised consumption sites) and promoting Housing First interventions and policies to reduce the prevalence of homelessness in Canada. ■

#### REFERENCES

- Booth, R. G., Shariff, S. Z., Carter, B., et al. (2024). Opioid-related overdose deaths among people experiencing homelessness, 2017 to 2021: A population-based analysis using coroner and health administrative data from Ontario, Canada. *Addiction*, 119(2), 334–344. <https://doi.org/10.1111/add.16357>

# The Role of Research in Nursing

## LEARNING OUTCOMES

After reading this chapter, you will be able to do the following:

- State the significance of research to the practice of nursing.
- Understand how theory, research, and practice are connected.
- Describe the history of nursing research.
- Identify the roles of the research user and research producer.
- Identify trends and priorities in health care research.

## KEY TERMS

critical appraisal  
data  
dissemination

evidence-based practice  
evidence-informed practice  
phenomena

quality improvement  
research

## STUDY RESOURCES



Go to Evolve at <http://evolve.elsevier.com/Canada/LoBiondo/research> for the Audio Glossary.

**HOW DO YOU KNOW WHAT YOU KNOW?** Is it less painful for a patient if you remove a burn dressing slowly or quickly? What are the challenges that pregnant women face in obtaining prenatal care, and how is this complicated by lack of transportation or housing? How do you assess pain in someone with cognitive impairment like dementia? What is the best way to talk to parents who are hesitant to vaccinate their child? Does cannabis have a therapeutic effect in the treatment of anxiety? These are all important questions for nurses—and each one can be explored through research.

Research is a systematic way of acquiring knowledge. Nurses also gain knowledge through personal experience, as well as from family,

culture, tradition, and scientific and medical authorities. Historically, many nursing practices were based on received wisdom or tradition. Some of the first documented discussions of the importance of research evidence in nursing practice are from Florence Nightingale, who, in the 1850s, observed a connection between poor sanitary conditions and death rates among wounded soldiers (Nightingale, 1863).

In Europe, in the early twentieth century, a movement began to define criteria that would separate science from nonscience, such as pseudoscience, metaphysics, ideology, and religion. Scientific and pseudoscientific knowledge can be differentiated based on the strength of beliefs, cognitive value, and inductive logic (Younas, 2021).

The scientific method was developed as a systematic way to generate knowledge and understand the world. While human beings have an incredible capacity for thinking and understanding the world around them, they often make mistakes and are influenced by beliefs and ideology that do not reflect reality. Over the past century, psychological studies have revealed that cognitive biases can influence human judgement, leading to problematic or distorted perceptions of the world around us. These biases can affect the safety of clients in health care (Thirsk et al., 2022). Nurses' hunches about patterns and probabilities are insufficient to ensure good clinical decision making. Given the scarcity of health care resources, it is essential for nurses and other health care providers to use these resources judiciously. In other words, competence in nursing requires the ability to provide care grounded in evidence (Schmidt & Brown, 2024).

Research is integral to achieving the goal of providing excellence in patient outcomes in partnership with patients, their families and significant others, and the communities in which they live. As you progress through your educational program, you will be taught how to ensure quality and safety in practice by gaining a comprehensive understanding of scientific and health care principles. Research serves as a critical foundation for evidence-informed nursing practice, enabling nurses to lead change and drive improvements in patient outcomes.

The aim of this book is to prepare you to critically appraise research and integrate it into your practice. Throughout the text, you will encounter special features designed to refine and develop your competence in using research effectively. Each chapter contains a *Critical Thinking Decision Path* corresponding to steps in the research process—these will sharpen your decision-making skills as you critique research articles. Additionally, *Internet* resources within the chapters will enhance your skills as a research user. *Critical Thinking*

*Challenges*, found at the end of each chapter, reinforce your critical thinking and judgement related to each stage of the research process. Scattered throughout the chapters are *Research Hints*, which will support your understanding and encourage deeper reflection. To help you apply research concepts in clinical settings, *Evidence-Informed Practice Tips* offer practical strategies for evidence-informed nursing. Finally, *Practical Application* boxes provide real-life examples demonstrating how to translate research principles and methods into nursing interventions in patient care.

Your critical thinking, critical reading, and clinical decision-making skills will grow as you learn to develop clinical questions, search the research literature, evaluate the evidence, and make informed decisions about applying the best available research. This book guides you through the “who, what, where, when, why, and how” of research, helping you build a solid foundation of knowledge, evidence-informed practice, and competencies essential for nursing practice in the twenty-first century.

To start, this chapter provides an overview of the importance of research in evidence-informed practice, the role research plays in nursing, the various roles nurses hold in research activities, and future directions in health care research.

## SIGNIFICANCE OF RESEARCH AND EVIDENCE-INFORMED PRACTICE

The health care environment is changing at an increasingly rapid pace. The challenges associated with these changes, along with the rapid growth of the nursing profession, are best addressed by integrating evidence-informed knowledge into nursing practice. Nursing research provides scientific knowledge that enables nurses to keep pace with these developments.

In learning about research, it is important to differentiate between the terms *research*, *evidence-based practice*, and *evidence-informed practice*. Nursing **research** is a systematic, rigorous, and

logical investigation aimed at answering questions about nursing phenomena. **Phenomena** can be defined as occurrences, situations, or facts that can be perceived by the senses. Although the origin of the term *phenomena* refers to events that are observable and/or measurable, nurses are also concerned with experiences that are not easily observed, such as pain, loss, or anxiety.

Over the past 25 years, many health care disciplines have adopted the tenets of evidence-informed practice to improve patient care. The roots of modern evidence-informed practice stem from Dr. Archie Cochrane's investigations into the efficacy of health care interventions, particularly in medicine. His work led to the establishment of the Cochrane Collaboration (now referred to as Cochrane), which provides systematic reviews of health care interventions.

In 1996, Sackett and colleagues defined *evidence-based medicine* as the “conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (p. 312). This definition marked the beginning of **evidence-based practice**, which has since been adopted by most health professions. Research is conducted, published in academic journals, and then critically appraised for its relevance to clinical practice—resulting in practice that is evidence based.

However, the evidence-based practice movement has not been without challenges. The strict application of algorithms and guidelines—especially those based on selective trials that overlook patients with multiple morbidities—may result in care that is not appropriate for individual patients. In some cases, bias in data may alter the algorithms developed from that data (see Figure 1 in [Martinez-Ortigosa et al., 2023](#)). Evidence-based practice can also become rigid, failing to account for patient preferences, individuality, and contextual factors.

**Evidence-informed practice** extends beyond the early definitions of evidence-based practice. While the methods for gathering evidence remain the same, evidence-informed practice also

incorporates expert opinion, clinical expertise, patient preferences, and other relevant resources ([Canadian Nurses Association \[CNA\], 2018](#)). Evidence-informed practice emphasizes a more inclusive and interactive process of decision making that relevant to all nurses—whether they are clinicians, educators, researchers, administrators, or policymakers ([CNA, 2018](#)). Building on the foundation of evidence-based practice, evidence-informed practice acknowledges and integrates the many factors involved in clinical decisions, including patient values, culture, history, and local context.

At first, the research and evidence-informed practice processes may appear similar. Both begin with a question. The difference lies in how the question is addressed. In a research study, the question is tested using a design appropriate to the inquiry, using specific methods such as sampling, instruments, procedures, and **data** analysis. In contrast, the evidence-informed practice process uses the question to guide a search of the existing literature; this literature is then critically appraised to answer the clinical question. The methods and findings of these research studies provide evidence that must be critically evaluated for its quality and relevance; its applicability to practice is then used to inform clinical decision making.

Broadly, there are two types of research: quantitative and qualitative. Increasingly, researchers employ mixed methods—that is, they use both types of research within a single project or across a program of research examining a particular phenomenon. These research approaches will be introduced in more depth in Chapter 2. In addition, *Research Vignettes* throughout the text illustrate the link between research, education, and practice by introducing you to nurses who use various research methods to explore phenomena important to health care and nursing practice. The methods used by nurse researchers are consistent with those used in other disciplines; what distinguishes them is their focus on questions relevant

to nursing. Nurse researchers also collaborate with researchers from other fields to conduct studies that generate reliable, practice-relevant knowledge.

Throughout this text, the steps involved in both research and evidence-informed practice will be described. Gaining an understanding of the step-by-step research process will help you develop the assessment skills necessary to evaluate the quality of studies and, ultimately, to participate in—or lead—research projects. Chapter 21 will further explore how to implement evidence into practice to improve patient outcomes.

## RESEARCH: THE ELEMENT THAT LINKS THEORY, EDUCATION, AND PRACTICE

Research serves as the vital link between theory, education, and practice. Theoretical frameworks that are supported by—or developed from—research findings may form the foundations of theory-informed nursing practice and guide future research studies. Your educational setting—whether a nursing program or the health care organization where you are employed—provides an environment in which you, as a student or employee, can learn about the research process. Within this context, you can also explore various theories and practices and begin to evaluate them in light of research findings. The knowledge you acquire through your educational program, whether grounded in theory or research, will inform the decisions you make in your practice. See the Practical Application box for an example of how theory and research influence health care practices.

The example in the Practical Application box is an attempt to answer a question that you may have asked before taking this course: “How will the theory and research content of this course relate to my nursing practice?” This example from the research demonstrates how theory informs practice, how knowledge based only on experience can be biased and limited, and how approaching clinical problems with systematic, scientific research methods can improve patient outcomes. Theory needs to be tested through



### Practical Application

A tertiary cardiac and surgical Neonatal Intensive Care Unit (NICU) implemented a project to improve the use of skin-to-skin care (SSC), parental holds, and alternative parent touch (APT) techniques for infants, especially those with complex medical conditions. Given the complexity of the care environment, patient fragility, and staff hesitancy, SSC—which is acknowledged for its beneficial neurodevelopmental and affective outcomes—often remains underutilized in these settings. To eliminate these obstacles, the project combined teaching, simulations, and interdisciplinary cooperation within a flexible, family-centred approach. The program led to a considerable increase in parental connection with newborns over an 18-month period, reflecting a change in the NICU’s ethos regarding the integration of SSC and APT. Physical space and patient acuity were undoubtedly ongoing issues, but the absence of negative occurrences suggests that these procedures are both safe and feasible. Future research is needed to explore the long-term neurodevelopmental and affective outcomes of such interventions, as well as strategies for their systematic implementation and sustained education.

From Levesque, V., Johnson, K., McKenzie, A., et al. (2021). Implementing a skin-to-skin care and parent touch initiative in a tertiary cardiac and surgical Neonatal Intensive Care Unit. *Advances in Neonatal Care*, 21(2), E24–E34. <https://doi.org/10.1097/ANC.0000000000000770>

research, and this new evidence then needs to be incorporated into practice. In the absence of evidence, theoretical knowledge will often guide practice. Research can also be used to generate new theory. The relationships between theory, practice, and research will be further explored in Chapter 2.

Learning about research will give you an appreciation for and understanding of the research process so that you can more easily become a participant in research activities and an intelligent consumer of research. A research user actively uses and applies research. To be a knowledgeable research user, you must have knowledge about the relevant subject matter, the ability to discriminate and evaluate information logically, and the ability to apply the knowledge gained. You need not actually conduct research to be able to appreciate and use research findings in practice. Rather, you must understand the research process and develop the critical evaluation skills needed

to judge the merit and relevance of evidence before applying it to practice. The success of evidence-informed practice depends on your ability to understand the research process and to evaluate the evidence. Nurses in practice—who understand research and its contribution to knowledge—are well positioned to identify phenomena and issues to be studied by asking relevant research questions.

## ROLES OF THE NURSE IN THE RESEARCH PROCESS

Every nurse practising in the twenty-first century has a professional responsibility that extends beyond direct care to include participation in the research process. As stated in the *Code of Ethics for Nurses* (CNA, 2025):

By engaging in research and/or participating in scholarly activities and sharing clinical insights, nurses contribute valuable information and innovative practices that advance nursing knowledge, improve outcomes (i.e., client, nurse, team, organization, system) and inform health system transformation. Nurses' involvement along the consumer–producer research continuum, evidence-based practice, and lifelong learning helps to refine existing techniques and develop new approaches, ultimately leading to improved client outcomes, transformation of the health system, and the progression of the nursing profession.

(p. 48)

What does this mean for you? There is a consensus that effective use of research calls for the skills of **critical appraisal**; that is, you can appraise research evidence and use existing standards to determine the merit and readiness of research for use in clinical practice:

Sources of evidence need to be critically appraised before their findings are incorporated into decision-making and practice. Sources that meet this standard include systematic reviews, research studies and peer-reviewed journals that summarize valid and clinically useful published studies.

(CNA, 2018, p. 1)

Therefore, to develop the ability to use research for evidence-informed practice, you do not

necessarily have to be conducting research. However, you do need to understand and appraise the steps of the research process in order to critically read the research literature and apply it to clinical decision making. Even as a student, you can participate by completing surveys, attending research conferences, and asking thoughtful questions.

At the provincial/territorial level, each jurisdiction in Canada has its own standards for entry into nursing practice, and many of these standards have specific related research competencies. For example, the *College of Registered Nurses of Alberta* (2019) outlined the following competency for nurses in their role as scholars:

Registered nurses are scholars who demonstrate a lifelong commitment to excellence in practice through critical inquiry, continuous learning, application of evidence to practice, and support of research activities.

(p. 13)

Nurses must be intelligent users of research; that is, they must understand all the steps of the research process and their interrelationships. Frisch et al. (2020) developed the health services research pathway as a professional development tool explaining the five levels of nurses' roles in research (Table 1.1). The nurse interprets, evaluates, and determines the credibility of research findings. They distinguish between interesting findings that require further investigation and those sufficiently supported by evidence to be applied in practice. These competencies can then be used to advance nursing or interdisciplinary evidence-informed practice projects (e.g., developing clinical standards, tracking **quality improvement** data, or coordinating implementation of a pilot project to test the efficacy of a new wound care protocol), often supported by the workplace committees to which the nurse belongs. Nurses are also responsible for generating clinical questions to identify nursing issues that require investigation and for participating in the implementation of scientific studies. They often generate research ideas or questions based on hunches, gut-level feelings, intuition, or observations of patients or

TABLE 1.1

**HEALTH SERVICES RESEARCHER PATHWAY**

|                                                                                           | RESEARCH PROCESS                                                                                                                                                                                                                                                                                                                                                            | DATA ANALYSIS LITERACY                                                                                                                                                                                                                                                | KNOWLEDGE TRANSLATION                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Level 1 Research User:<br>Learning about research use in care delivery settings           | <ul style="list-style-type: none"> <li>Defines and distinguishes between research and quality improvement</li> <li>Follows agency policy and clinical practice guidelines; collaborates on QI activities</li> <li>Curious and willing to learn about research</li> </ul>                                                                                                    | <ul style="list-style-type: none"> <li>Understands and values statistics and quantitative and qualitative research methods</li> <li>Reads research reports</li> </ul>                                                                                                 | <ul style="list-style-type: none"> <li>Identifies credible and reliable resources</li> <li>Performs literature searches, integrating evidence into evidence-informed practice</li> <li>Interested in and advocates for practice improvement</li> </ul>                                                                                                                                 |
| Level 2 Research User:<br>Using research in care delivery settings                        | <ul style="list-style-type: none"> <li>Describes research and QI processes; explains QI processes and models</li> <li>Interprets protocols for relevancy, conducts literature reviews, participates in policy development and QI</li> <li>Appreciates relationship between research and practice, values active engagement of frontline staff in QI and research</li> </ul> | <ul style="list-style-type: none"> <li>Understands application of statistics and steps of research process</li> <li>Collects and uses accurate data, uses basic statistics and qualitative methods</li> <li>Appreciates the process of conducting research</li> </ul> | <ul style="list-style-type: none"> <li>Identifies opportunities for knowledge sharing, understands concept of strength of evidence, distinguishing between single studies and systematic reviews</li> <li>Collaborates with team to change practice and support KT</li> <li>Aware of and appreciates research activities in the workplace and willing to lead KT activities</li> </ul> |
| Level 3 Research User:<br>Facilitating and leading research use in care delivery settings | <ul style="list-style-type: none"> <li>Describes emerging knowledge, best practices, and priorities; facilitates research</li> </ul>                                                                                                                                                                                                                                        | <ul style="list-style-type: none"> <li>Interprets qualitative and quantitative data and can conduct simple analysis</li> </ul>                                                                                                                                        | <ul style="list-style-type: none"> <li>Describes KT practices and facilitates KT projects, translates projects</li> </ul>                                                                                                                                                                                                                                                              |
| Level 4 Research Producer:<br>Beginning researcher                                        | <ul style="list-style-type: none"> <li>Understands research designs and theoretical frameworks, manages research projects, contributes to research teams</li> </ul>                                                                                                                                                                                                         | <ul style="list-style-type: none"> <li>Understands advanced analysis techniques, critically and accurately analyzes research data</li> </ul>                                                                                                                          | <ul style="list-style-type: none"> <li>Uses research findings to support policy and practice, carries out KT plans</li> </ul>                                                                                                                                                                                                                                                          |
| Level 5 Research Producer:<br>Research scientist leading a program of research            | <ul style="list-style-type: none"> <li>Expertise in at least one method, understands various research approaches</li> <li>Leads a program of research</li> </ul>                                                                                                                                                                                                            | <ul style="list-style-type: none"> <li>Expert in analysis methods in own research program, manages and supervises use of data, values rigorous analysis</li> </ul>                                                                                                    | <ul style="list-style-type: none"> <li>Builds and implements KT as part of own research program</li> </ul>                                                                                                                                                                                                                                                                             |

QI, Quality improvement; KT, knowledge translation.

Adapted from Frisch, N., & Hamilton, S. (2020). *Health services researcher pathway*. Michael Smith Foundation for Health Research and the BC Nursing Research Initiative.

nursing care. These ideas often become the seeds of research investigations.

Nurses may participate in research projects as members of research teams in one or more phases of a project. For example, a staff nurse may work on a clinical research unit in which a research project is underway to test a new type of nursing care (e.g., for pain management, falls prevention, or treatment of urinary incontinence). In situations like these, the nurse administers care according to the research protocol. The nurse may also be involved in collecting and recording data relevant to the administration of, and the patient's response to, nursing care.

Once new knowledge is generated, it is important to share the findings widely—a process known as **dissemination**. Examples of dissemination include publishing an article or presenting at a conference. It may also involve participating in a health care agency's research committee or its quality assurance or quality improvement committee, where research articles, integrative literature reviews, and clinical practice guidelines are evaluated to support evidence-informed clinical decision making.

Nurses who hold graduate degrees are further prepared to conduct research as co-investigators or primary investigators. With a master's degree, nurses can take on more active roles within research teams. Although master's programs often focus on advanced clinical practice, advanced practice nurses remain champions of research. They may serve as clinical experts, collaborating with experienced researchers on proposal development, data collection, data analysis, and interpretation of the findings. Nurses with master's degrees enhance the quality and relevance of nursing research by contributing clinical expertise and evidence-informed knowledge about how clinical services are delivered. Master's-level nurses also help facilitate the investigation of clinical problems by fostering a climate that supports nursing research and by engaging in evidence-informed practice projects. A clinical nurse specialist with a master's or doctoral degree in nursing and expertise

in a specific practice area may act as a primary researcher or as a collaborator to “ensure their practice applies evidence-based care most effectively while being a leader in every aspect of research” (see “Roles” section, CNA, n.d.).

To achieve the highest level of expertise in appraising, designing, and conducting research, nurses must complete doctoral studies (PhD). Nurses with doctoral degrees develop theories related to phenomena of relevance to nursing, create methods of scientific inquiry, and apply various approaches to modify or extend existing knowledge so it is applicable to nursing and broader health care contexts. In addition to their roles as researchers, doctoral-prepared nurses act as role models and mentors, guiding, stimulating, and encouraging other nurses in the development of their research skills. They also collaborate and consult with social, educational, and health care institutions, as well as government agencies, in the pursuit of their research endeavours. These nurses then disseminate their findings to the scientific community, clinicians, and—when appropriate—the general public through peer-reviewed journal articles and presentations at research conferences.

An essential responsibility of all nurses is to uphold ethical principles in research, particularly the protection of human participants (see Chapter 6). For example, nurses caring for patients enrolled in a research study on antinausea chemotherapy must ensure that patients have signed an informed consent form and that all questions have been answered by the research team before participation begins. Furthermore, if a patient experiences an adverse reaction to the medication, nurse withhold further doses until an appropriate member of the research team has been notified. Regardless of their specific role, nurses should view participation in the research process as integral to the advancement of nursing professionalism.

As a professional, you must take time to read and evaluate research studies using current scientific standards. You also need to critique

studies to identify their strengths and limitations. Recognizing that each study has its constraints, you should assess whether sound and relevant findings from one context can be applied in others. Chapter 21 will expand on how to incorporate research into your nursing practice.

## HISTORICAL PERSPECTIVE<sup>1</sup>

During the Crimean War, Florence Nightingale's detailed and systematic observation of nursing actions and outcomes led to significant changes in nursing practice. Her work demonstrated the value of systematic observational research in informing nursing practice.

In Canada, the development of university-level nursing education—beginning with the introduction of nursing courses in 1918, followed by master's programs in the 1950s and 1970s and doctoral programs in the 1990s and 2000s—was crucial to the advancement of nursing research. Since the 1970s and 1980s, two major factors have driven the development of nursing research: the establishment of research training through doctoral programs and the creation of funding to support nursing-led research.

Throughout the 1970s and 1980s, university faculties and schools of nursing invested in building their research capacity in preparation for establishing doctoral programs. The first provincially approved doctoral program in nursing was launched at the University of Alberta Faculty of Nursing in 1991. Later that year, a second program was established at The University of British Columbia School of Nursing, followed by doctoral programs at McGill University and the University of Toronto in 1993. Today, many universities across Canada offer doctoral programs in nursing. In addition, university-based programs for registered psychiat-

ric nurses have grown, with the first master's degree in this field established at Brandon University in 2011.

Awareness of the importance of nursing research gradually led to increased availability of research funding. In 1964, a federal granting agency funded nursing research in Canada for the first time (Good, 1969). In 1999, the Canadian government created the Nursing Research Fund, allocating \$25 million over 10 years (\$2.5 million annually) to support nursing research. Priority areas for funding included nursing policies, management, human resources, and nursing care. Although this specific funding is no longer available, nurse researchers have since been successful in securing Tri-Council funding nationally, as well as international funding, to support their research programs. The Tri-Council refers to Canada's three federal research agencies: the Canadian Institutes of Health Research (CIHR), the Natural Science and Engineering Research Council of Canada (NSERC), and the Social Sciences and Humanities Research Council (SSHRC).

## CURRENT STATE AND FUTURE DIRECTIONS

While the past 30 years have seen an increase in the number of nurse researchers in Canada, challenges remain. A global shortage of nursing faculty—particularly nurses who hold PhDs—impacts both the education of the next generation of nurses and the capacity for nursing research (Cantin et al., 2022). In Canada, numerous faculty vacancies persist, and an insufficient number of PhD graduates is available to fill these spaces each year. Retirements, academic attrition, and diminished enrollment in doctoral nursing programs all contribute to this shortfall (Cantin et al., 2022). Nursing faculty are needed to teach in undergraduate and graduate programs and to mentor the next generation of nurse researchers. To advance the body of nursing knowledge, nurses must develop programs of research, increase research on nursing interventions and outcomes, and remain informed about national and international trends and issues in health and health care.

<sup>1</sup>This section (i.e., “Historical Perspective”) is adapted with permission from Wytenbroek, L., & Grypma, S. (2024). The development of nursing in Canada. In B. J. Astle & W. Duggleby (Eds.), *Canadian fundamentals of nursing* (7th ed., pp. 34–46). Elsevier.

## Developing Programs of Research

To build a robust body of research knowledge, nurses should be recruited early in their careers to pursue graduate education and develop programs of research. Establishing a program of research takes time. Researchers need sufficient career length to develop expertise, establish collaborations, and secure funding to support their investigations.

Research programs that consist of a series of related studies—each building on prior investigations—promote depth and credibility in nursing science. An example of such a research program is provided in the Practical Application box. To maximize the use of resources and avoid duplication, researchers must establish intradisciplinary, interdisciplinary, and international networks within similar areas of study. Researchers from a variety of health professions (e.g., medicine, nursing, and respiratory therapy) and other disciplines, such as psychology, law, and business, can collaborate to delineate both common and unique aspects of patient care. Interdisciplinary health research may involve “a team of researchers who come together to research an important and challenging health issue” (Hall et al., 2006, p. 764). Since 2010, interprofessional collaboration (IPC) has been prioritized in the health care sector in numerous countries, including Canada. This collaborative approach is recognized as a critical strategy to enhance patient safety and reduce adverse events (Levesque et al., 2022).

## Interventions and Outcomes

Nursing staff who follow clearly articulated nursing interventions—such as well-defined models of care, patient care pathways, or clinical practice guidelines—are more likely to work systematically toward shared care objectives (Nordaunet et al., 2023).

Strategies that enhance nurses’ focus on outcomes management—through evidence-informed quality improvement activities and the application of research findings to support clinical decision making—are also being refined and identified as

research priorities (see Chapter 21). Evidence-informed practice guidelines, standards, protocols, decision tools, and critical pathways are increasingly used as benchmarks for cost-effective, high-quality clinical care. For example, the Registered Nurses’ Association of Ontario (RNAO, n.d.) has developed more than 50 Best Practice Guidelines (BPGs) to support nurses in delivering optimal patient care.



### Evidence-Informed Practice Tip

The COVID-19 pandemic, which began in 2020, created both challenges and opportunities for nursing research. While it delayed the conduct of some research projects and funding decisions, it also generated a plethora of studies on emerging topics. For example, researchers have examined the impact of personal protective equipment (PPE) on nursing workflow in emergency departments (Canadian Institutes of Health Research [CIHR], 2020), standardized nursing care models for patients with COVID-19 (Richards, 2020), and nursing leadership in acute and long-term care settings during the pandemic (Baxter, 2020).

## An International Perspective

The CNA has partnered with international networks in more than 45 countries to strengthen nursing’s contribution to global health through study, research, and practice (CNA, 2012). Given nursing’s emphasis on the cultural aspects of care and the impact of these factors on practice, international research activity is expected to grow. Globalization provides access to diverse populations, enabling the testing and refinement of nursing science from various cultural and contextual perspectives.

International research projects often focus on comparative studies in which a phenomenon is examined across multiple countries. Ideally, these initiatives foster relationships among researchers at international sites, resulting in collaborative projects. Although financial and logistical barriers remain, the number of such collaborations continues to grow. Nurse researchers involved in collaborative international partnerships are well positioned to make a significant contribution to improving health care globally (CNA, 2012; Fogarty International Centre, 2015).

An example of international collaboration is the Nursing and Artificial Intelligence Leadership (NAIL) Collaborative. This interdisciplinary group includes experts in AI development, biomedical ethics, AI in primary care, legal aspects of AI, the philosophy of AI in health care, nursing practice, implementation science, leaders in health informatics practice and international health informatics groups, representatives of patients and the public, and the chair of the ITU/WHO Focus Group on Artificial Intelligence for Health (Ronquillo et al., 2021).

International organizations committed to the goal of “health care for all” help create natural opportunities for research partnerships. For instance, the World Health Organization (WHO, n.d.) has established a series of collaborating centres to advance health care globally. One such centre focuses on maximizing the contribution of nursing and midwifery by providing relevant research and clinical training to nurses worldwide.

## Research Priorities Reflecting Trends and Issues

Funding agencies often determine research priorities based on their specific needs and interests. These priorities frequently reflect emerging trends and pressing issues in health and health care. In 2018, the Canadian Association of Schools of Nursing (CASN) identified seven priorities for nursing research:

- Indigenous and other vulnerable and/or equity-seeking communities
- Chronic disease management and care delivery across space and time
- Home care and primary health care nursing
- Care of older adults across diverse care contexts
- Roles, scopes of practice, and value of registered nurses and/or nurse practitioners to health care
- Nursing care, quality improvement, and patient safety
- Nursing education outcomes

Healthcare Excellence Canada (created following the amalgamation of the Canadian

Foundation for Healthcare Improvement and the Canadian Patient Safety Institute in 2021) supports the spread of health care innovations throughout Canada by bringing together patients, families, health and social service providers, governments, and other organizations to address persistent health care challenges (Healthcare Excellence Canada [HEC], n.d.-a). While operating as the Canadian Foundation for Healthcare Improvement, the organization identified two priority areas: (1) improving access to addiction and mental health services and (2) enhancing home and community care (HEC, n.d.-b). These areas were also identified by the Government of Canada as shared health priorities between the federal, provincial, and territorial governments (Health Canada, 2018).

The CIHR, one of the largest funders of health research in Canada, developed a strategy for patient-oriented research to involve patients more actively—as partners rather than merely participants—and to promote research focused on patient-identified priorities (CIHR, 2025). This initiative led to the establishment of research units across the country to support the advancement of patient-oriented research. As a result, this strategy has influenced both the funding landscape and the support mechanisms available for research centred on patient outcomes.

Reducing health disparities in underserved communities and vulnerable populations remains a major focus for future nursing and interdisciplinary research, particularly in relation to Indigenous populations. Part of CIHR (n.d.) is the Institute of Indigenous Peoples’ Health, and the health of First Nations, Inuit, and Metis populations is a priority for several other CIHR institutes. In 2019, CIHR created six research awards for Indigenous Research Chairs in Nursing, totalling nearly \$6 million. These awards support Indigenous and non-Indigenous nurses conducting research focused on Indigenous health.

Health research will continue to address needs across the lifespan. For example, maternal and

infants health concerns will remain a research focus, particularly in efforts to reduce maternal–neonatal mortality rates. Individuals of all ages who survive life-threatening illnesses often rely on new life-sustaining technologies, which create additional demands for self-care and family support. Chronic conditions such as cancer, heart disease, arthritis, asthma, chronic obstructive pulmonary disease, diabetes, and Alzheimer’s disease—especially prevalent in mid- and later life—will continue to account for a substantial portion of health care expenditures. The long-term impacts of the COVID-19 pandemic on individuals and communities will also be a growing area of investigation. In addition, HIV/AIDS, a chronic condition affecting adults and children alike, continues to have significant implications for health care delivery. Ongoing developments in palliative care and research on medical assistance in dying (MAiD) will likewise remain prominent.

Mental health illness and addictions represent another critical area of concern. Greater understanding of mental disorders will emerge as psychobiological knowledge expands through research. Mental illness remains a major public health issue. For example, the WHO states that “depression is a leading cause of disability and is a major contributor to the overall global burden of disease. Globally, it is estimated that 5% of adults suffer from depression” (see “The health argument” in WHO, 2021).

Nurse researchers are increasingly influencing public policy related to health care. Nursing—because of its focus on managing chronic illness, promoting health and independence, and providing care for the acutely ill—will play a central role in shaping future health care policy. Research that evaluates the effectiveness of health care interventions and services in these domains will be especially timely and relevant. The impact of registered nurses in primary care settings—specifically in terms of patient satisfaction, enablement, quality of life, self-efficacy, and improved

health behaviours—has been well established through research and will continue to inform policy development (Lukewich et al., 2022).

Data analytics holds immense potential for enhancing health care. Nurse leaders will require competencies in analyzing and managing data using advanced analytical tools. Informatics-savvy nurse leaders can promote meaningful use of large clinical data sets generated by digital health technologies. For example, applying machine learning to electronic health records offers the potential for personalized care and more accurate clinical decision making at the point of care (Lo et al., 2021).

Knowing how to ethically access and competently analyze such data will be essential for nurses—regardless of their roles—to make the most of emerging technologies and data systems.

The communication of nursing research has also become increasingly important. Research findings continue to be disseminated through professional avenues, such as international, national, regional, and local journals, conferences, webinars, and websites, as well as through staff development and consultation initiatives. Public dissemination of research findings has also gained importance.

Nurse researchers are increasingly called upon to testify at governmental hearings and serve on commissions and task forces related to health care. Nurses are also more frequently cited in media coverage of health topics, increasing their visibility and influence.

As new opportunities arise and gaps in evidence are identified, nurses will continue to conduct, critique, and apply research in ways that clearly demonstrate the value of nursing care. The profession has a rich heritage of research excellence and faces a future filled with both challenges and possibilities. Researchers and users of research alike must work collaboratively to generate and apply evidence that improves patient care and transforms lives through a commitment to evidence-informed nursing practice.

## CRITICAL THINKING CHALLENGES

- What research roles are you interested in?
- What effects will research on evidence-informed patient outcomes have on the practice of nursing?
- Why is it important to have interdisciplinary and international research perspectives?
- What topics in nursing do you think require further research?

## CHECK YOUR UNDERSTANDING

1. What is the most appropriate source of information for evidence-informed practice?
  - a. Charge nurse
  - b. Attending physician
  - c. Clinical practice guideline
  - d. Nightingale's notes on nursing
2. Why are interdisciplinary networks important in research?
  - a. Collaboration can help solve complex problems.
  - b. Nurses do not do independent research.
  - c. Research funding needs to be spread across disciplines.
  - d. There is overlap in the scopes of practice.
3. What drives the priorities for health care research?
  - a. Political agenda
  - b. Changes in values in society
  - c. Trends and issues in health care
  - d. The United Nations

## KEY POINTS

- Nursing research expands the body of scientific knowledge that forms the foundation of evidence-informed nursing practice.
- Nurses gain research literacy through education and practical experience. As users of research, nurses must have a basic understanding of the research process and must demonstrate critical appraisal skills to evaluate

the strengths and limitations of research before applying the research to clinical practice.

- All nurses, whether they possess baccalaureate, master's, or doctoral degrees, have a responsibility to participate in the research process.
- Programs of research and replication of studies will become increasingly valuable.
- Research studies will emphasize clinical issues, problems, and outcomes. Priority will be given to research studies that focus on health promotion, care for the health needs of vulnerable groups, and the development of cost-effective health care systems.
- Both users of research and nurse researchers will engage in a collaborative effort to further the growth of nursing research and accomplish the profession's research objectives.

## FOR FURTHER STUDY

Go to Evolve at <http://evolve.elsevier.com/Canada/LoBiondo/research> for the Audio Glossary.

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# Theoretical Frameworks

## LEARNING OUTCOMES

After reading this chapter, you will be able to do the following:

- Define key concepts in the philosophy of science.
- Identify and differentiate between theoretical/empirical, aesthetic, personal, sociopolitical, and ethical ways of knowing.
- Identify assumptions underlying the post-positivist, critical social, and interpretive/constructivist views of research.
- Compare inductive and deductive reasoning.
- Describe how a framework guides research.
- Differentiate between conceptual and operational definitions.
- Describe the relationships between theory, research, practice, and leadership.
- Discuss levels of abstraction related to frameworks guiding research.
- Describe the points of critical appraisal used to evaluate the appropriateness, cohesiveness, and consistency of a framework guiding research.

## KEY TERMS

aim of inquiry  
concept  
conceptual definition  
conceptual framework  
constructivism  
context  
critical social theory  
critical social thought  
epistemology

hypothesis  
inductive reasoning  
methodology  
model  
ontology  
operational definition  
paradigm  
philosophical beliefs  
positivism

post-positivism  
qualitative research  
quantitative research  
theoretical framework  
theory  
values  
variables  
world view

## STUDY RESOURCES



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## THE NATURE OF KNOWLEDGE

**AS YOU LEARNED IN CHAPTER 1, NURSES DEVISE** clinical questions, based on their daily practice experiences that—if answered—can improve the care they provide to individuals, families, and communities. Each question requires that clinicians and nurse researchers engage in a knowledge development process (Fig. 2.1). The process begins with the identification of *knowledge gaps*: the absence of theoretical or scientific knowledge relevant to the phenomenon of interest. *Knowledge generation* occurs next, with the conduct of research that provides answers to well-formulated research questions. This *knowledge* is then *distributed* through journal articles, textbooks, and public presentations to nurses. Next, the *knowledge* is *adopted* as nurses alter their practice based on published information or as health care organizations develop policies and protocols informed by newly generated knowledge. Finally, *knowledge is reviewed and revised*

as new health issues arise, advances in clinical practice occur, or knowledge becomes outdated. In this chapter, we focus specifically on theoretical frameworks and how they guide and inform *knowledge generation*.

Nursing knowledge is created and interpreted at various *levels of abstraction*, ranging from the most abstract to the most concrete thinking (Butts, 2015). Fawcett identified five components of nursing knowledge—metaparadigm, philosophy, conceptual model, theory, and empirical indicator—which span a range of abstraction levels (Butts, 2015). The *metaparadigm* is the most abstract level of knowledge in nursing. It is the world view of the discipline, which distinguishes its focus (Butts, 2015). *Philosophy* addresses questions about existence, reality, knowing, and ethics as they pertain to nursing (Butts, 2015). *Conceptual models* are a set of concepts that address broad, general ideas of interest to the discipline, while *theories* translate concepts into testable questions that can be explored using *empirical indicators*

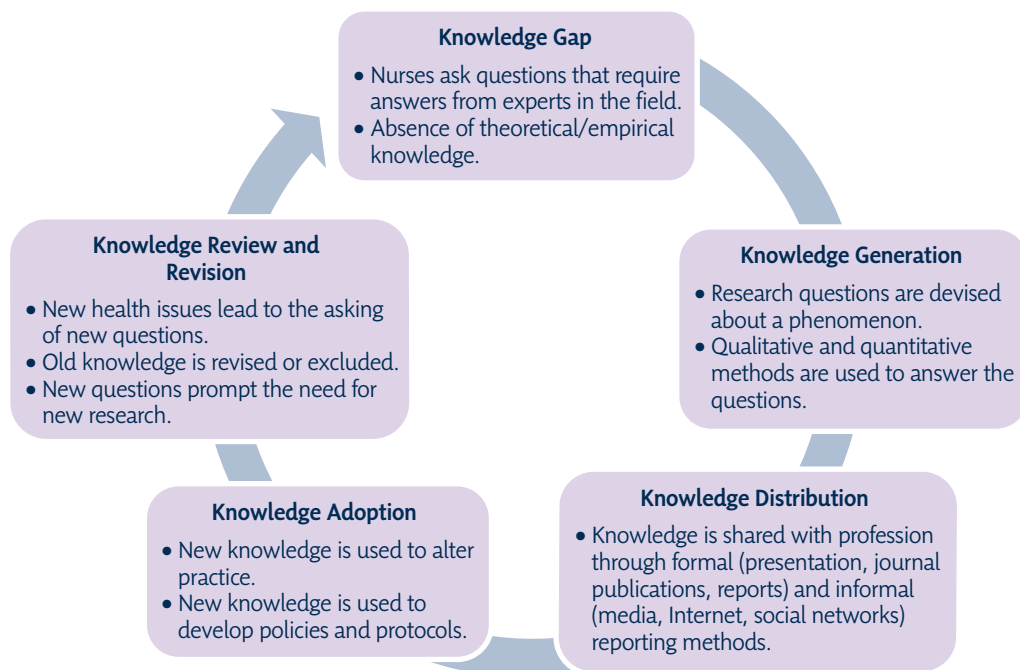
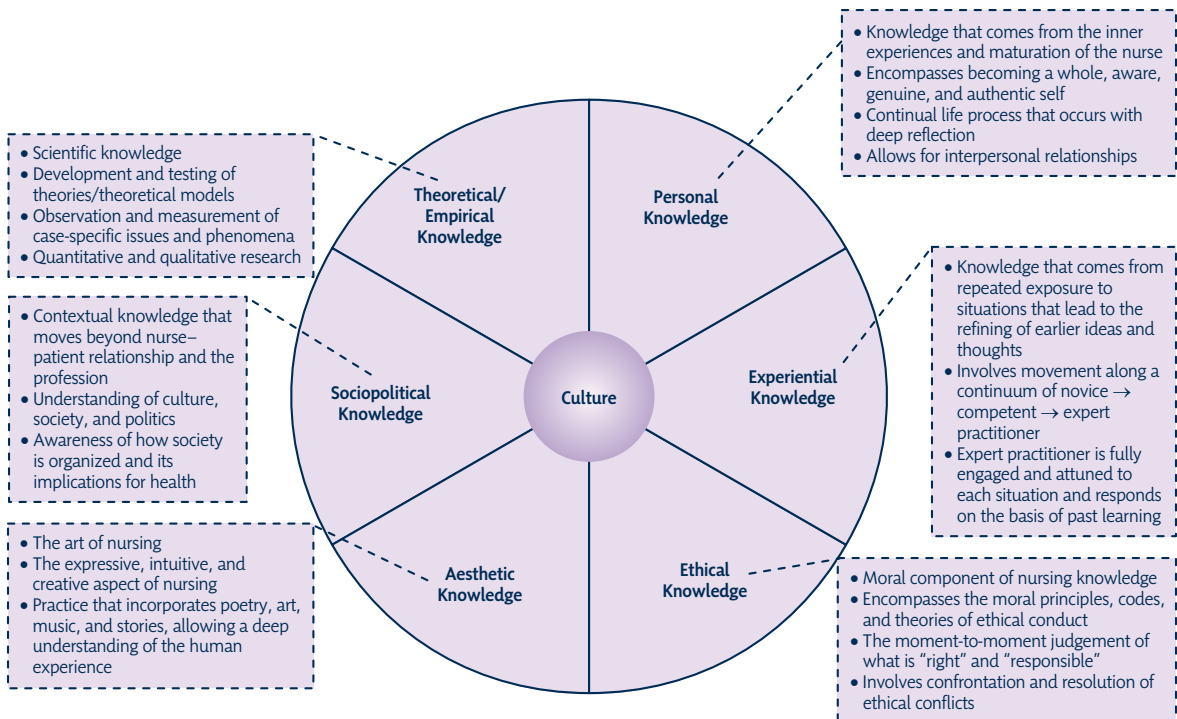


FIG. 2.1 Knowledge development process.



**FIG. 2.2** Nursing knowledge.

(Adapted from Chapter 2 of the previous edition of this book, written by Cherylyn Cameron.)

such as instruments, experiments, or procedures (Butts, 2015).

Fig. 2.2 outlines the various ways in which nurses inform their practice. These include *theoretical/empirical*, *personal*, *experiential*, *ethical*, *aesthetic*, and *sociopolitical/cultural* ways of knowing (Chinn & Kramer, 2015; Zander, 2007). Empirical knowing is acquired through the scientific process, which results in tested and justifiable knowledge for practice (Zander, 2007). In contrast, aesthetics is the art of nursing, whereby the nurse interprets the patient's behaviour and needs and addresses the bigger picture of patient care (Zander, 2007). Ethical knowing is the moral component of nursing and is concerned with justifying and judging actions. This knowing depends on an understanding of philosophical concepts about what is good as well as rights and obligations (Zander, 2007). Personal knowing involves an

existential awareness of self and others in relationship (Zander, 2007). Experience and intuition constitute other forms of knowing in nursing (Zander, 2007). Understanding the sociopolitical context of practice is an overarching way of knowing; nurses can situate their practice and knowledge within a societal context (Zander, 2007).

It is important to remember that the way we understand these aspects of knowledge is based on our cultural perspectives, such as Western ideologies or Indigenous ways of knowing. Indigenous perspectives are covered in depth in Chapter 7, but a brief introduction is warranted here. Indigenous knowledge is “a learned way of looking at the world that may have very different forms of acquisitions, transmission, and manifestation for Indigenous peoples” (Battiste & Henderson, 2000, p. 48). Indigenous knowledge is transmitted through oral traditions, which provide a way of

understanding Indigenous peoples' experiences and promote the continued existence of their cultures. Battiste (2000) argues that Indigenous knowledge is essential for transformation toward a just society that will “engage with and react to multiple circumstances and shapes of oppression, exploitation, assimilation, colonization, racism, genderism, ageism, and the many other strategies of marginalization” (p. xxi). Battiste (2002) notes that Indigenous epistemology is located in theories, philosophies, histories, ceremonies, and stories as ways of knowing. The guiding tenets of Indigenous epistemology encompass a legitimate way of knowing, storytelling as a method for sharing knowledge, and the relationship between the researcher and participants as a natural component of the research process (Kovach, 2005). Indigenous epistemology is derived from multiple sources, including traditional knowledge from previous generations, empirical knowledge from careful observation, personal knowledge and experiences, oral transmission, holistic knowledge, and experimental knowledge (Castellano, 2000).

From the Western perspective, which makes up the predominant world view in Canada, theoretical/empirical knowledge is most commonly referred to as *scientific knowledge*. Theoretical/empirical knowledge has gained prominence in nursing as evidence-informed practice has become more central to the profession. Theoretical and empirical knowledge are deeply interconnected and often cannot be meaningfully separated, as theoretical knowing is informed by empirical knowing. Theoretical knowing involves developing or testing theories—possible explanations or ideas—that nurse researchers have about how the world operates. This process necessarily involves observations of reality, which may include the following:

1. Speaking with people about their life experiences (e.g., living with Alzheimer's disease) and using their responses to specific and general questions to understand the condition
2. Observing social or cultural interactions (e.g., homeless individuals interacting with service providers) as they naturally occur, interpreting what the interactions might mean for both parties, and using those interpretations to develop theories about health service delivery for that population
3. Delivering an intervention (e.g., a school health program for children with obesity) and assessing changes in health care–related behaviours (e.g., type of foods consumed, amount of daily exercise, weight and other biomedical parameters) following the completion of the intervention
4. Using surveys or a questionnaire to ask a large group of people about their health experiences or current symptom levels with regard to, for example, pain, digestive issues, or depression

Taking the work of Nahm and colleagues (2010) as an example, the authors hypothesized that using social cognitive theory (involving self-efficacy, mastery, and modelling) as the foundation for a hip fracture prevention website would be more effective in changing individuals' health behaviours than conventional educational strategies; this **hypothesis** is an example of *theoretical knowing*. However, it was only through developing a clinical trial that tested the intervention that Nahm and colleagues could observe the effectiveness of the theory-based educational website (e.g., differences in knowledge and health behaviours) compared to the effectiveness of a conventional prevention website. Their findings provided support for their original hypothesis; this support is an example of *empirical knowing*.

## PHILOSOPHIES OF RESEARCH

Thus far, we have used a number of terms that may be new to you. Every discipline has distinctive terminology for communicating important features of the work in that field. Learning new terminology is part of what nursing students do when they learn research methods and skills. Each research method and all philosophies of science

have specialized language that nursing students will encounter in the literature. Thus, to help you understand the research you will encounter, it is important to clarify a few terms.

All research is based on **philosophical beliefs** about the world; these beliefs are the motivating values, concepts, principles, and nature of human knowledge of an individual, group, or culture, and they are the basis of a **world view** or **paradigm**. *Paradigm* is from the Greek word *paradeigma*, meaning “pattern.” Paradigms are “different ways of viewing the world and often form the foundation from which research is undertaken. They consist of a set of assumptions about what is reality, how knowledge is created and what is valuable to learn” (Davies & Fisher, 2018, p. 21). Therefore, knowing and understanding these views and practices is important in order to understand and use research findings. They are not right or wrong; rather, they represent different ways of viewing the world and the way things operate within it. Nurse researchers may tend to gravitate toward a particular world view, but it is important to remember that different kinds of research questions call for different approaches to understanding and studying reality, so it is possible for researchers to value different world views at different times. For example, a researcher may know that a certain drug has side effects or that turning bedridden patients regularly will reduce the risk of skin breakdown, but they also understand that people’s narratives about their experiences will yield multiple and sometimes conflicting explanations. This example illustrates how different paradigms can be held simultaneously.

Paradigms can overlap and are not mutually exclusive (Davies & Fisher, 2018), though categorizations can simplify learning about the basic world views. In nursing, there are three key paradigmatic perspectives that are commonly held and that generally underpin various approaches to research. These are positivism/post-positivism, constructivism, and critical theory. These three

paradigms are compared in Table 2.1; however, first, you need to understand the philosophical language used in the table. **Ontology** (from the Greek word *onto*, meaning “to be”) is the study of being or existence and its relationship to non-existence. Ontology addresses two primary questions: (1) What exists or what is real? and (2) Into what categories can existing things be sorted? **Epistemology** addresses four key questions: (1) What is knowledge? (2) What are the sources of knowledge? (3) What are the ways we come to know something, in contrast to believing, wondering, guessing, or imagining? and (4) What is truth and what role does it play in knowledge? **Methodology** refers to the principles, rules, and procedures that guide the process through which knowledge is acquired. **Aim of inquiry** refers to the goals or specific objectives of the research. **Context** refers to the personal, social, organizational, cultural, and/or political environment in which a phenomenon of interest (the “thing” of interest) occurs. The context of research studies can include physical settings, such as the hospital or home, or less concrete “environments,” such as the context that cultural understandings bring to an experience. **Values** are the things that the nurse researcher holds to be important.

**Positivism** is a philosophical orientation that arose in the eighteenth century, part of the movement away from religious knowing to reasoning and science. Positivistic research aims for objectivity and impartiality, with the goal of producing unbiased, generalizable research. **Post-positivism** emerged in response to the realization that such objectivity is usually not possible and that our observations cannot always be relied upon because they are subject to error and human bias—human beings have different values, cultures, and life experiences and thus will inevitably produce different interpretations.

**Constructivism**, also referred to as interpretivism or relativism, points to the centrality of human experiences, social and cultural constructs, values,

TABLE 2.1

## BASIC RESEARCH PARADIGMS

| ITEM/QUESTIONS                                                                                                                | POST-POSITIVISM                                                                                                                                                                                                                                                                                                                                                        | CRITICAL THEORY                                                                                                                                                                                                                                                                                                                                                                                                | CONSTRUCTIVISM                                                                                                                                                                                                                                                                                                                                                                                           |
|-------------------------------------------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>ONTOLOGY</b>                                                                                                               |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                          |
| What can be said to exist?<br>Into what categories can we sort existing things?                                               | A material world exists.<br>Not all things can be understood, sensed, or placed into a cause–effect relationship.<br>The senses provide us with an imperfect understanding of the external/material world.                                                                                                                                                             | Reality is constructed by those with the most power at particular points in history.<br>Over time, reality is shaped by numerous social, political, economic, and cultural forces.<br>Stories/discourses shaped by the powerful become accepted reality.                                                                                                                                                       | Reality is constructed by individual perception within a social context.<br>Truth is relative and based on perception or a particular frame of reference.                                                                                                                                                                                                                                                |
| <b>EPISTEMOLOGY</b>                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                          |
| What is knowledge?<br>How is knowledge acquired?<br>How do we know what we know?                                              | Researchers are naturally biased.<br>Objectivity (controlled bias) is the ultimate goal, although pure objectivity is not attainable.<br>Triangulation and replication of findings are used across multiple perspectives.                                                                                                                                              | Research is a transaction that occurs between the researcher and research participant.<br>The perceptions (standpoint) of the researcher and the research participants naturally influence knowledge generation/creation.<br>Perceptions (standpoints) are determined by context, and so contextual awareness and its relationship to the participant's understanding of reality is the focus of the research. | Research is a transaction that occurs between the researcher and research participant.<br>Research emphasizes the meaning ascribed to human experiences.<br>Objectivity is not possible; knowledge is co-created.                                                                                                                                                                                        |
| <b>RESEARCHER'S VALUES</b>                                                                                                    |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                          |
| How do the researcher's values influence the knowledge development process?                                                   | All attempts are made to exclude researcher bias.<br>Influence is denied.                                                                                                                                                                                                                                                                                              | Researcher perspectives are acknowledged and recognized as influential.<br>Researcher values drive research questions and purpose; researcher manages own perspectives.                                                                                                                                                                                                                                        | Researcher perspectives, values, and experiences are recognized as potentially influential.<br>Influence is managed with reflection and bracketing.                                                                                                                                                                                                                                                      |
| <b>METHODOLOGY</b>                                                                                                            |                                                                                                                                                                                                                                                                                                                                                                        |                                                                                                                                                                                                                                                                                                                                                                                                                |                                                                                                                                                                                                                                                                                                                                                                                                          |
| Within a particular discipline, what principles, rules, and procedures guide the process through which knowledge is acquired? | Inquiry generally involves quantitative methods and is viewed as a series of logically related steps.<br>Research questions/hypotheses are proposed and subjected to empirical testing.<br>Research is characterized by careful accounting for and control of factors that may influence research findings.<br>Qualitative research may be used to develop hypotheses. | Inquiry requires dialogue between the investigator and research participant.<br>Research purposes are transformative, emancipatory, or consciousness raising.<br>Dialogue brings to the forefront the historical context behind experiences of suffering, conflict, and collective struggles.<br>Dialogue increases participants' awareness of actions required to incite change.                              | Inquiry requires dialogue between the investigator and research participant.<br>The focus is on interpretation of interview data, documents, and artifacts, including written texts, art, and pictures.<br>Interpretation brings to the forefront the varying ways in which people construct their understanding of their social world and how their interpretation shifts as they interact with others. |

TABLE 2.1

**BASIC RESEARCH PARADIGMS—cont'd**

| ITEM/QUESTIONS                                                                              | POST-POSITIVISM                                                                              | CRITICAL THEORY                                                                                                                                                                                                                                                                                                                                                                                                                                                                    | CONSTRUCTIVISM                                                                                                                                                                          |
|---------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>AIM OF INQUIRY</b>                                                                       |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                         |
| What is the goal of research?                                                               | Explanation, prediction, and control                                                         | Critique, change, reconstructed reality, and emancipation                                                                                                                                                                                                                                                                                                                                                                                                                          | Understanding of social realities and interpretations of meaning                                                                                                                        |
| <b>CONTEXT</b>                                                                              |                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                                                         |
| What biographical, life, social, and political factors may influence the research findings? | An attempt is made to set aside researcher histories, politics, ideologies, and experiences. | The focus is on historical, social, and political context. Context refers to the social and political climate in which an event or process occurred. Social context highlights how structural, economic, representational, and institutional factors of the past influence how people understand an issue today. Political context highlights how political dialogue and opinions, legal directives, and government policies of the past influence how people understand an issue. | The focus is on life context, including significant conditions and demands that provide greater understanding of the phenomena being studied; the focus also emphasizes time and place. |
| Subparadigms/theories/methods                                                               | Critical realism<br>Mixed methods                                                            | Feminism<br>Critical race theory<br>Intersectionality<br>Disability studies<br>Critical policy analysis                                                                                                                                                                                                                                                                                                                                                                            | Symbolic interactionism<br>Philosophy<br>Qualitative approaches                                                                                                                         |

Adapted from Denzin, N. K., & Lincoln, Y. S. (2000). *Handbook of qualitative research*. SAGE Publications.

perspectives, and language (Clark et al., 2008). It is a philosophical orientation that suggests that reality and the way in which we understand our world largely depend on our perceptions and context. Truth about life experience is regarded as relative and multiple rather than absolute. The value of knowledge development lies in our increasing ability to understand how people perceive their world. Knowledge development occurs through observation, dialogue with people, or both and by paying attention to the language people use to describe life experiences. Constructivists tap into personal experience rather than seek measurement and elusive objectivity. This form of research seeks to create an understanding of

people and their life experiences from their point of view.

*Critical realism* is a philosophical orientation that has become of great interest in nursing research. It harnesses the strengths and addresses the limitations of positivism and constructivism (Clark et al., 2008) by acknowledging that, although there is a single reality, we cannot know it with certainty (Davies & Fisher, 2018). This perspective offers a middle ground that “does not reduce the world to unknowable chaos [as might be the case with relativism] or a positivistic universal order” (Clark et al., 2008, p. E68). In critical realism, social entities exist independently of human understanding. For example, discrimination and power imbalances

exist regardless of whether humans recognize their influence. However, human perceptions and experiences can still be incorporated into an understanding of reality (Clark et al., 2008). From a research perspective, truth and reality are ascertained through various approaches to data collection and analysis to increase the accuracy with which social phenomena are understood (Davies & Fisher, 2018).

**Critical social theory** emphasizes that reality and our understanding of reality are constructed by people who hold the most power in a particular time and place. This perspective supports the understanding that health and other aspects of reality are shaped by numerous social, political, economic, and cultural factors. Such factors include gender, sexual orientation, class and economic status, race and ethnicity, ability, and geographical location. In nursing research, a strong emphasis is placed on understanding how power imbalances associated with these factors influence health and well-being, access to health care, and patient experiences and outcomes. The goal of critical research is emancipation and social change (Davies & Fisher, 2018).

Some specific types of critical theory include feminist theory, critical race theory, queer theory, disability theory, and intersectionality. Feminist theories are numerous and varied (e.g., Marxist, poststructuralist, cultural, eco) but generally focus on the experiences of women—though this can be broadened to study the experiences and perspectives of all genders, especially in terms of stereotyping, marginalization (exclusion), and emancipation. The primary intent of feminist theories is to dismantle systems of oppression and raise awareness of gender disparities in a more meaningful way. Rolls and Young (2012) asserted that feminist nursing research ought to benefit women; value women's experiences, ideas, and needs; recognize the structural, interpersonal, and ideological conditions that oppress women; and include a portrayal of women's strengths. To apply these principles, they conducted

a review of the research literature about older women's experiences of heart failure. They found that there were very few studies on this topic because men have been the subjects of most research on cardiovascular disease; as a result, Rolls and Young called for more women-focused studies to inform nursing practice more broadly.

Critical race theory provides a foundation for “studying and transforming the relationship among race, racism, and power” (Delgado & Stefancic, 2001, p. 2). Critical race theorists argue that racism is an everyday experience that is difficult to address because it is often unacknowledged. They also observe that because race is an idea that benefits the dominant group in society, this group has no incentive to eliminate racism (Wesp et al., 2018). Wesp and colleagues (2018) evaluated models and guidelines for cultural competency in nursing from a critical race perspective. They found that most nurses would agree that there is a need to reduce culturally based disparities in health care, which cultural competency guidelines seek to address. However, they also showed that these guidelines fail to consider the prejudicial attitudes and imbalances of power that affect patient care and nursing practice. As a result, these guidelines paradoxically reinforce stereotypes and fail to produce meaningful change rather than promote true cultural competence.

Queer theory offers a critique of normative understandings of sex, gender, and sexuality, combining these with other aspects of social difference such as race and class (Hall & Jagose, 2013). Disability theory critiques the medical view of disability as an individual defect that requires cure or elimination. Critical disability theories allow scholars to explore and challenge systems of social injustice and oppression that equate ability with human worth (Siebers, 2008).

Intersectionality is a critical theoretical perspective that combines various critical theories. This shifts the focus from single aspects of identity

(such as gender or race) toward a recognition that these aspects work together in people's lived experiences. The ways that these social forces, identities, and ideologies combine in people's lives have an impact on how much power individuals hold or are denied (Crenshaw, 2017). Power dynamics have implications for people's expectations and experiences of care and for the ways that nurses relate to patients/clients (Van Herk et al., 2011). Van Herk and colleagues (2011) noted that nurses do not use intersectionality and critical theories as much as they should. They argued that nurses need to have a critical awareness of how power works in creating privilege for some and oppression for others in order to provide safe, high-quality care.



### Research Hint

Values are involved in all research. For the positivist/post-positivist, it is assumed that values will be held at a distance to minimize their influence. For critical social and constructivist researchers, values and their potential influences on the research results are incorporated more overtly in the research process. However, all researchers have values, and these influence research, regardless of whether they are acknowledged or made explicit.

## RESEARCH METHODS: QUALITATIVE AND QUANTITATIVE

Research methods are the techniques, procedures, and processes used by researchers to organize a study in order to answer the research question. Research methods can be classified into two major categories: qualitative and quantitative. A researcher chooses between these categories primarily based on the question the researcher is asking. If a researcher wishes to test a cause–effect relationship—such as how different levels of social support (cause) lead to high blood pressure (effect)—then quantitative methods are most appropriate. If, however, a researcher wishes to discover and understand the meaning of an experience or process, such as death and dying, a qualitative approach would be appropriate.

A researcher can also design a study that combines both categories, known as a mixed-methods approach.

**Qualitative research** is a systematic, interactive research method used to describe and interpret life experiences, with an emphasis on capturing participants' personal perceptions. Fig. 2.3 outlines the qualitative research process. A researcher opts for qualitative research when they wish to explore and understand human experiences such as illness, loss, or life changes.

Haghiri-Vijeh and Clark (2022) demonstrated the qualitative research process in their exploration of LGBTQI+ migrants' experiences of health and social care encounters in Canada. Their research process, as described in Fig. 2.3, was as follows:

- Step 1: The researchers began with a broad research question so that they could freely explore participants' experiences. They stated that “the purpose of this study was to understand LGBTQI+ migrant experiences of health and social care encounters and to provide recommendations for health and social care practices” (p. 1595). The researchers supported their research question with a review of the literature covering important contextual factors that could influence the experiences of LGBTQI+ migrants in Canada and how they experienced access to health and social care supports.
- Step 2: A purposive sample of 16 people was chosen to inform the phenomenon of interest according to the following inclusion criteria: identify as an LGBTQI+ migrant, over 19 years of age, received health care in Canada, and English speaking. Migrants had varying ages, countries of origin, years in Canada, religions, reasons for migrating, and sexual orientations.
- Step 3: Each person participated in a one-on-one interview.
- Step 4: Interviews were held over a period of 9 months to generate ample data. Once data collection commenced, the lead researcher made notes and journalled to help make sense and meaning of participants' experiences.

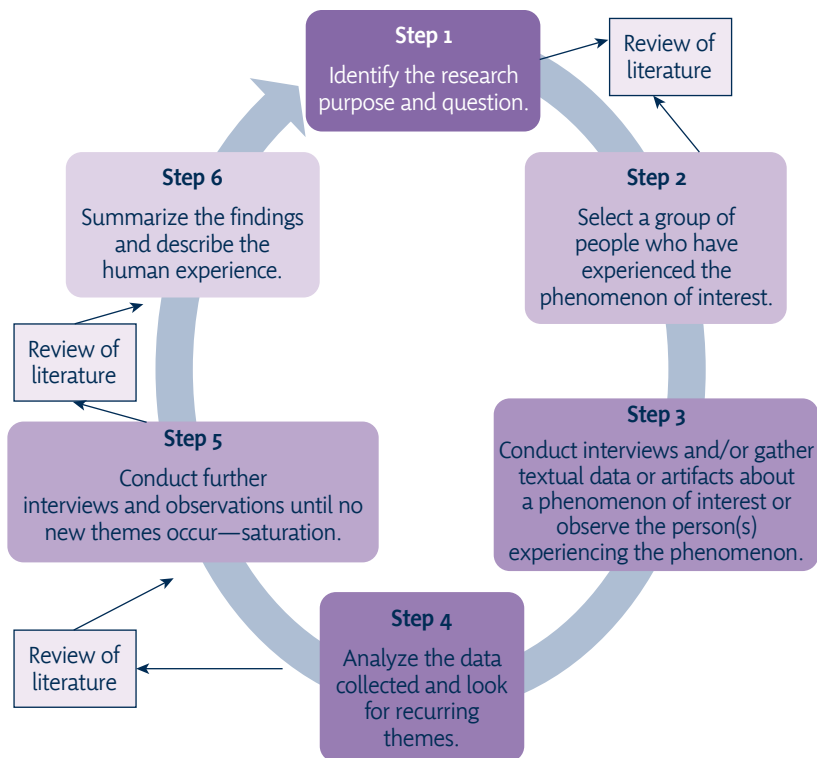


FIG. 2.3 Qualitative research process.

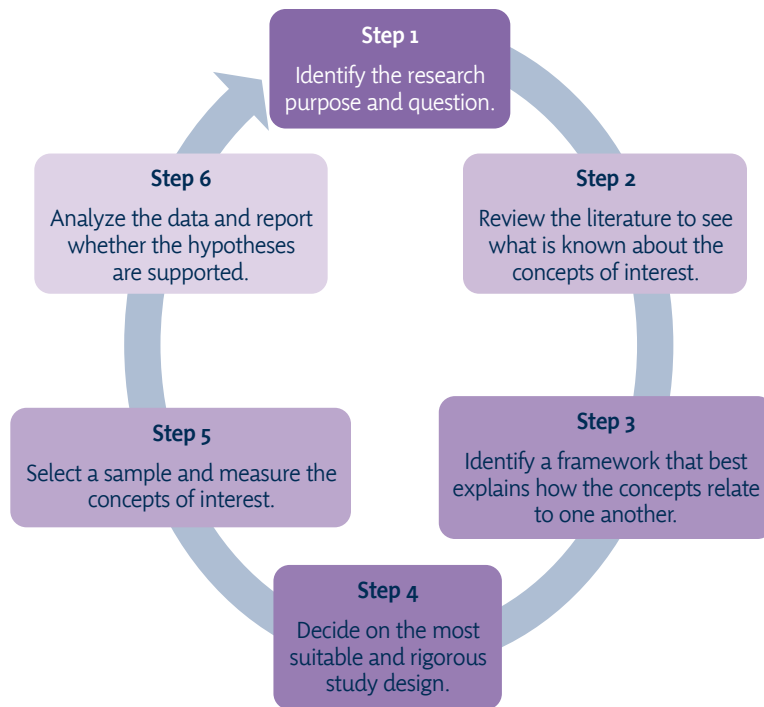
In subsequent interviews, researchers reframed, refuted, and validated questions that had arisen during data analysis.

- Step 5: Researchers developed themes and held discussions together to strengthen their interpretation of the data, including how it intersected with other constructs related to health and social care.
- Step 6: The findings were presented and then linked to the existing literature.

As illustrated by this study, qualitative research is generally conducted in natural settings. Data are usually words and/or images rather than numbers. Sample sizes are often relatively small when compared to quantitative research because the goal is to study a phenomenon in depth with people who can speak knowledgeably about an experience. Thus, data from qualitative studies help nurses understand experiences or phenomena that affect

patients, and this information in turn leads to improved care and stimulates further research. Chapters 8 and 9 provide an in-depth overview of the underpinnings, designs, and methods of qualitative research.

Where the purpose of qualitative research is to explore, describe, and/or explain a phenomenon or generate theory, a researcher chooses **quantitative research** if they are testing for the presence of specific relationships, assessing for group differences, clarifying cause–effect interactions, or explaining how effective a nursing intervention was. Quantitative methods entail the use of precise and controlled measurement techniques to gather data that can be analyzed and summarized statistically. Fig. 2.4 outlines the quantitative research process. Like the qualitative research process, the quantitative research process begins with the development of a research question and a purpose



**FIG. 2.4** Quantitative research process.

statement that highlight the relationship between two things.

The work of Belita et al. (2024) demonstrates the quantitative research process. The authors explored the prevalence of burnout, symptoms of anxiety and depression, and intention to leave among Canadian public health professionals. Their research process, as described in Fig. 2.4, was as follows:

- Step 1: The authors defined the aims of the study as being “to determine the prevalence of burnout, symptoms of anxiety and depression, and intention to leave public health among the Canadian public health workforce, and to determine associations with individual characteristics and workplace factors.”
- Step 2: The research process began with a review of the literature to determine what was known about the phenomenon of interest and theories that explain the phenomenon. In their introduction and review of the literature, the authors noted that although there were several studies examining the impact of the pandemic on the mental health of health care professionals working in hospitals or in general practice settings, there were no studies in Canada that explored this phenomenon within the context of the COVID-19 pandemic for public health professionals.
- Step 3: A cross-sectional study was conducted in English and French through an anonymous survey that measured sociodemographic and workplace characteristics, workplace stressors and resources, mental health outcomes, and intention to leave.
- Step 4: The authors described the survey tools in detail and provided a rationale for the choice of the surveys, including reliability and validity. Participants included public health professionals (e.g., nurses, epidemiologists)

and other workers (e.g., family home visitors) who were employed during the pandemic and were recruited online through social media and emails to public health organizations in Canada.

- Step 5: Data were analyzed using univariate and multivariate logistic regression to estimate odds ratios and 95% confidence intervals.
- Step 6: After conducting the statistical analysis, authors concluded that one-third of the Canadian public health workforce intended to leave their role in the next year. They also found that public health workers experienced negative impacts on their mental health and that policy and practice changes were needed.

An important step in the quantitative research process is to decide which design would best answer the research question. The options include descriptive, correlational, longitudinal, cross-sectional, quasiexperimental, and experimental designs.

As Belita and colleagues (2024) demonstrated in their article, quantitative research techniques are systematic, with the methodology emphasizing control of the research process, the environment in which the study is conducted, and measurement of each variable. In contrast to qualitative approaches—in which a question is asked and the participant is responsible for providing an in-depth response—quantitative responses are limited to a preselected set of responses.

As you read research articles, remember that researchers may vary the steps of the research process slightly, depending on the nature of the research problem, but all the steps should be addressed systematically.

## INTRODUCTION TO FRAMEWORKS FOR RESEARCH

Frameworks provide a general approach to understanding a phenomenon and help identify the key factors to consider when examining different aspects of health. A **concept** is an image or symbolic representation of an abstract idea. Chinn

and Kramer (2015, p. 160) define concept as a “complex mental formulation of experience.” Concepts offer ways to convey abstract ideas. A **conceptual framework** is a structure or assembly of concepts that is used as a map or a scaffolding of ideas for study. Generally, a conceptual framework is a synthesis or integration of existing views and knowledge on a topic, developed from a review of the literature (Imenda, 2014). The conceptual framework defines the main ideas and the network of relationships between them, grounding the study in the knowledge bases that are relevant to the research question. A specific theory may not be guiding the study, but concepts always are (Rocco & Plakhotnik, 2009).

A **theoretical framework** is similar but distinct; a **theory** is a unified set of interrelated concepts that explains or predicts phenomena. A theory is like a blueprint, depicting the elements of a structure and the relationship of each element to the other, the same way a theory unifies and depicts both the concepts that compose it and how they are related (Imenda, 2014). Chinn and Kramer (2015) define theory as an “expression of knowledge . . . the creative and rigorous structuring of ideas that project a tentative, purposeful, and systematic view of phenomena” (p. 255). Theory guides practice and research; practice enables the testing of theory and generates questions for research; and research contributes to theory building. Thus, what is learned through practice, theory, and research constitutes the knowledge of the discipline of nursing. When a researcher uses a theoretical framework, they are presenting a specific, unified, highly developed theory, such as systems theory or self-efficacy, and any previous empirical work about or development of that theory (Imenda, 2014; Rocco & Plakhotnik, 2009).

A widely used framework in nursing is the social determinants of health framework. It is based on the understanding that Canadians’ health is shaped primarily not by medical treatments or lifestyle choices but rather by the inequitable

living conditions they face (Mikkonen & Raphael, 2010). According to this framework, people's health and well-being are determined by the following 14 factors:

1. Indian status<sup>1</sup>
2. Gender
3. Disability
4. Housing
5. Early childhood development
6. Income and income distribution
7. Education
8. Race
9. Employment and working conditions
10. Social exclusion
11. Food insecurity
12. Social safety net
13. Health services
14. Unemployment and job security

A framework does not necessarily show how all factors are interrelated. The social determinants of health framework guides the researcher in addressing the relationship between health and any of the 14 factors just listed. The researcher can determine how many factors to focus on and consider in what way the factors relate to each other and, in turn, to health. In some cases, the researcher may develop a diagram or pictorial representation of these relationships.

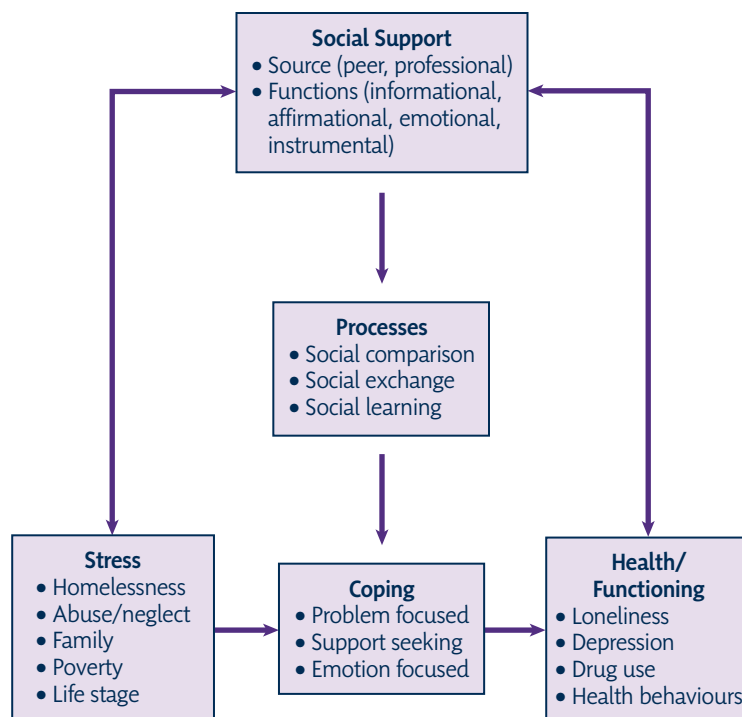
A **model** is a symbolic representation of a set of concepts, designed to depict their relationships. Fig. 2.5 shows the model of social support developed by Stewart et al. (2009). It highlights the process through which support from peers and professionals influences the stressful life situations, coping behaviours, and health care-related behaviours of homeless youths. In this model, arrows indicate how social support is related to

the social network, stress, and health functioning. For example, the arrow from “social support” to “processes” suggests that social support has an effect on social network comparison, exchange, and learning. Whether this relationship is positive or negative is unknown; however, the social network then influences coping behaviours (problem focused, support seeking, and emotion focused), and these behaviours in turn influence health care-related functioning (loneliness, depression, drug use, and health behaviours).

Qualitative and quantitative research rely on different types of reasoning to arrive at their conclusions. **Inductive reasoning** is the pattern of “figuring out what is there” from the details of the nursing practice experience and serves as the foundation for most qualitative inquiry. It is the process of starting with the details of experience and building toward a general picture. Research questions examining the meaning of patient experiences can be addressed with the inductive reasoning of qualitative inquiry. By comparison, **deductive reasoning**, used by quantitative researchers, starts with the general picture—in this case, the theory—and moves toward the specific. In deductive reasoning, the researcher measures concepts that, when combined, enable the researcher to suggest relationships between the concepts. Deductive reasoning begins with a structure that guides searching for “what is there.” Inductive and deductive reasoning can both be used within a field of study, or even within a single study, to explore concepts and test variables, thereby building a comprehensive body of knowledge on a particular topic.

**Variables** are factors that can take on a range of values (e.g., temperature, heart rate, pain, job satisfaction). The key empirical aspects of a study—its concepts and variables—are generally articulated through conceptual and operational definitions. A **conceptual definition** is much like a dictionary definition, conveying the general meaning of the concept. However, for research, the conceptual definition goes beyond the general meaning found in the dictionary; the concept is

<sup>1</sup>Many Indigenous peoples in Canada prefer not to describe themselves as “Indians,” viewing the term as rooted in colonialism and racism (Indigenous Services Canada, 2025). Under the *Indian Act*, however, the term has a specific legal meaning and refers to First Nations persons who are entitled to registration as “Status Indians.”



**FIG. 2.5** Conceptual model.

(From Stewart, M., Reutter, L., Letourneau, N., et al. [2009]. A support intervention to promote health and coping among homeless youths. *Canadian Journal of Nursing Research*, 41[2], 54–77.)

grounded in the theoretical literature. The **operational definition** specifies how the concept will be measured—that is, what instruments will be used to capture the features of the variable.

The Critical Thinking Decision Paths provided in later chapters take you through the thinking of a researcher who is about to begin conducting their research. You can expect to find some, but not all, phases of decision making addressed in a research publication. Beginning with the research question, the researcher is inclined to approach a research problem from the perspective of inductive or deductive reasoning. Qualitative researchers, who pursue an inductive reasoning approach, generally do not present a framework before beginning the discussion of methods. This is not to say that the literature will not be reviewed before the methods are introduced. Qualitative researchers may use a

conceptual or theoretical framework to inform or sensitize themselves to existing thinking and theorizing about their topic (Bowen, 2006). However, they avoid using a framework to structure their analysis in order to interpret their data with minimal bias.

Conversely, researchers who use deductive reasoning must choose between a conceptual framework and a theoretical framework. In the theory literature, these terms are used interchangeably (Chinn & Kramer, 2015). However, in the case presented in the Critical Thinking Decision Path, each term is distinguished from the other based on whether the researcher is creating the structure or the structure has already been created by someone else. In general, each of these terms refers to a structure that provides guidance for research by assisting the researcher