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Chapter 1
Introducing Nursing Research for Evidence-Based Practice

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What Is Nursing Research?

- **Research**
  - Systematic inquiry using disciplined methods to answer questions or solve problems
- **Nursing research**
  - Systematic inquiry to develop trustworthy evidence about issues of importance to nurses and their clients
- **Clinical nursing research**
  - Nursing research designed to guide nursing practice

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The Importance of Research to Evidence-Based Nursing

- **Evidence-based practice (EBP)**
  - The use of the best clinical evidence in making patient care decisions
  - The basis for nursing decisions; influences many recent clinical practice changes
  - Produces decisions that are clinically appropriate, cost-effective, and result in positive client outcomes

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Roles of Nurses in Research

- Contribute an idea for a study.
- Gather information from those taking part in a study.
- Advise clients about participating in a study.
- Search for research evidence to address a practice problem.
- Discuss the implications of a study in a journal club in a practice setting; meet to discuss research articles.

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Nursing Research: Past and Present

- 1850s: Pioneered by Florence Nightingale
- 1950s: First journal on research (*Nursing Research*) helped to propel nursing research.
- 1960s: Practice-oriented research began to emerge, and research-oriented journals started publication in several countries.
- 1970s: A change in research emphasis from areas such as teaching and nurses' characteristics to improvements in client care. Nurses also began to pay attention to the utilization of research findings in nursing practice.
- 1986: National Center for Nursing Research established at NIH.
- 1993: National Institute of Nursing Research (NINR) established and increase in nursing journals

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Current and Future Directions for Nursing Research

- Continued focus on evidence-based practice (EBP)
- Ongoing growth of research syntheses
- Increased emphasis on patient centeredness
- Relatedly, greater interest in the applicability of research
- Expanded local research and quality improvement efforts in health care settings
- Increased focus on health disparities
- Growing interest in defining and ascertaining clinical significance

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Question #1

Tell whether the following statement is True or False.

Research findings increasingly must meet the test of being clinically significant, and medical practitioners have taken center stage in efforts to define clinical significance.

a. True

b. False

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Answer to Question #1

b. False

Rationale: Research findings increasingly must meet the test of being clinically significant, and *patients* have taken center stage in efforts to define clinical significance. A major challenge in the years ahead will involve incorporating both research evidence and patient preferences into clinical decisions.

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NINR's Strategic Plan: Areas of Focus

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

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Knowledge Sources for Nursing Practice

- Tradition and "experts"
- Clinical experience and trial and error
- Disciplined research: best method of acquiring reliable knowledge; evidence-based findings

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Question #2

What is the best method of acquiring reliable knowledge on which to base a clinical practice?

a. Traditions and authority

b. Clinical experience and trial and error

c. Assembled information

d. Disciplined research

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Answer to Question #2

d. Disciplined research

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

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Paradigms and Methods for Nursing Research

- **Paradigm**
  - Worldview or general perspective of the world's complexities
- **Assumption**
  - A principle that is believed to be true without verification
- Key paradigms for nursing research
  - **Positivist paradigm**
  - **Constructivist paradigm**

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Research Methods

- The techniques used to structure a study and to gather, analyze, and interpret information
  - **Quantitative research**: most closely allied with the positivist tradition
  - **Qualitative research**: associated with the constructivist tradition
    - Positivists sometimes undertake qualitative studies, and constructivist researchers sometimes collect quantitative information.

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Positivism Paradigm #1

- **Positivism**
  - Reality exists; it should be studied and known.
  - Assumes that nature is ordered and regular, and that a reality exists independent of human observation
  - Assumption of **determinism** refers to the belief that phenomena are not haphazard but rather have antecedent causes.
    - Research activity is aimed at understanding the underlying causes of natural phenomena.
    - Objectivity is prized; strive to be as unbiased as possible.

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Positivism Paradigm #2

- **Positivism: Scientific Method**
  - Involves using orderly procedures to gather primarily quantitative information
  - **Quantitative Research**
  - The gathering of **empirical evidence**—evidence that is rooted in objective reality and gathered through the senses rather than through personal beliefs
  - Information is numeric information resulting from some type of formal measurement and that is analyzed statistically.
  - Strive to go beyond the specifics of a situation; generalize research findings to individuals who did not take part in the study (**generalizability**).

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Positivism Paradigm #3

TABLE 1.1 Key Methodologic Differences in the Positivist and Constructivist Paradigms

Positivist Paradigm (Quantitative Research)	Constructivist Paradigm (Qualitative Research)
Deductive processes → hypothesis testing	Inductive processes → hypothesis generation
Emphasis on discrete, specific concepts	Emphasis on the entirety of a phenomenon; holistic
Focus on the objective and quantifiable	Focus on the subjective and nonquantifiable
Outsider knowledge—researcher is external, separate	Insider knowledge—researcher is part of the process
Fixed, prespecified research design	Flexible, emergent research design
Controls over context	Context-bound
Large, representative samples	Small, information-rich samples
Measured (quantitative) information	Narrative (unstructured) information
Statistical analysis	Qualitative analysis
Seeks generalizations	Seeks in-depth understanding

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Constructivist Paradigm #1

- **Constructivist**
  - Reality is not a fixed entity but rather a construction of the people participating in the research.
  - Reality exists within a context with many constructions.
  - Assumes that nature is ordered and regular and that a reality exists independent of human observation
  - Assumes that knowledge is maximized when the distance between the inquirer and participants in the study is minimized
    - The voices and interpretations of those under study are crucial to understanding the phenomenon.

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Constructivist Paradigm #2

- **Constructivist: Scientific Method**
  - Focuses on understanding the human experience as it is lived
  - **Qualitative Research**
  - Emphasizes the dynamic, holistic, and individual aspects of human life and tries to capture those aspects in their entirety, within the context of those who are experiencing them
  - Flexible; typically is undertaken in naturalistic settings
  - Yields rich, in-depth information that can potentially clarify the dimensions of a complicated phenomenon

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Question #3

What is a major assumption of the constructivist paradigm worldview?

a. Reality is mentally constructed by individuals.

b. The researcher is independent from those researched.

c. Values and biases are held in check.

d. Subjectivity is not desirable.

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Answer to Question #3

a. Reality is mentally constructed by individuals.

Rationale: In the constructivist paradigm, reality is multiple and subjective and mentally constructed by individuals. The researcher is independent from those researched, values and biases are held in check, and subjectivity is not desirable in the positivist paradigm.

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Question #4

Tell whether the following statement is True or False.

Quantitative research is allied with the constructivist tradition.

a. True

b. False

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Answer to Question #4

b. False

Rationale: Qualitative research is associated with constructivist tradition that involves a dynamic design and holism and is context-bound.

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Common Features in Both Paradigms

- Ultimate goals
- External evidence
- Reliance on human cooperation
- Ethical constraints
- Fallibility

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Research for Varying Levels of Explanation

- Identification: What is this phenomenon? What is its name? (Qual)
- Description: How prevalent is the phenomenon? (Quan) What are the dimensions or characteristics of the phenomenon? (Qual)
- Exploration: What factors are related to the phenomenon? (Quan) What is the full nature of the phenomenon? (Qual)
- Prediction/control: If phenomenon X occurs, will phenomenon Y follow? Can the phenomenon be prevented? (Quan)
- Explanation: What is the underlying cause of the phenomenon? (Quan) What does the phenomenon mean? (Qual)

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Research Purposes Linked to EBP #1

- Therapy/intervention
- Diagnosis and assessment
- Prognosis
- Etiology (causation)/prevention of harm
- Description
- Meaning and process

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Research Purposes Linked to EBP #2

TABLE 1.2 Different Categories of Question Relating to Cigarette Smoking

Type of Question	Example of a Research Question on Cigarette Smoking
Therapy/intervention	Does a nurse-led smoking cessation program for young adults reduce smoking?
Diagnosis/assessment	Is our Smoking Susceptibility Index a valid and reliable measure of teenagers' propensity to initiate smoking?
Prognosis	Is a diagnosis of smoking-related lung cancer associated with increased risk of suicidal ideation?
Etiology (causation)/prevention of harm	Does being a smoker increase the risk of a fatality among people infected with the novel coronavirus?
Description	What percentage of high school students smoke ≥1 pack of cigarettes per week?
Meaning/process	What is it like for long-term smokers to attempt and fail at quitting?

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Basics of Evidence-Based Nursing Practice #1

- Evidence-based practice (EBP)
  - Best evidence
    - Clinical problem-solving strategy that de-emphasizes decisions based on tradition or expert opinion
  - Patient preferences and values
    - Require understanding patients' circumstances, such as the resources at their disposal
  - Clinical expertise
    - Knowledge gained during training and continuing education, experiences with patient care, and interdisciplinary sharing of new knowledge

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Basics of Evidence-Based Nursing Practice #2

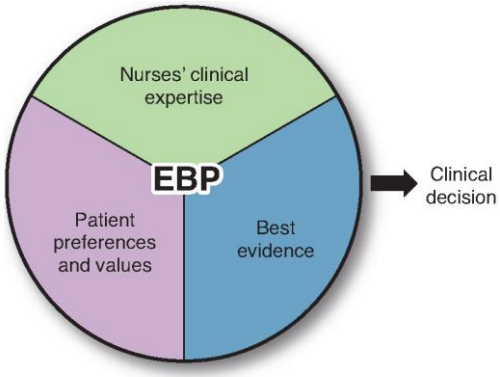

Figure 1.1 Model of evidence-based nursing practice.

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Sources of "Best" Research Evidence

- Primary studies
- Systematic review
  - Meta-analysis (quantitative)
  - Meta-synthesis (qualitative)
  - Meta-aggregation (qualitative)
  - Mixed studies review (qualitative and quantitative)

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Evidence Hierarchies and Level of Evidence Scales #1

- **Evidence hierarchies** (see Fig. 1.2)
- Rank evidence sources in terms of their risk of bias, focusing mainly on risk of bias in studies addressing Therapy questions
  - Represented as pyramid
    - Least bias for making inferences about the effects of an intervention—at the top
  - **Level of evidence (LOE) scales**
    - Level I evidence usually is considered the best (least biased) type of evidence.
      - Randomized controlled trial (RCT)

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Evidence Hierarchies and Level of Evidence Scales #2

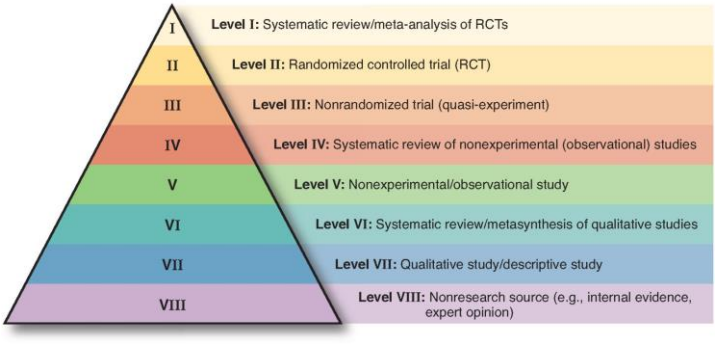

Figure 1.2 Polit–Beck Evidence Hierarchy/Level of Evidence Scale for Therapy questions.

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Asking Well-Worded Clinical Questions #1

- The first activity in EBP involves asking well-worded clinical questions that can be answered with research evidence.
- **PICO**
  - P: the Population or patients (What are key characteristics of the patients or people?)
  - I: the Intervention, influence, or exposure (What is the intervention or therapy of interest? or, What is a potentially beneficial—or harmful—influence?)
  - C: an explicit Comparison to the "I" component (With what is the intervention or influence being compared?)
  - O: the Outcome (What is the outcome in which we are interested?)

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Asking Well-Worded Clinical Questions #2

Box 1.1 Questions for a Preliminary Overview of a Research Report

1. How relevant is the research problem to the practice of nursing?
2. Was the study quantitative or qualitative?
3. What was the underlying purpose (or purposes) of the study—Therapy/intervention, Diagnosis/Assessment, Prognosis, Etiology/harm, Description, or Meaning?
4. What might be some clinical implications of this research? To what type of people and settings is the research most relevant? If the findings were accurate, how might *I* use the results of this study?

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Question #5

Tell whether the following statement is True or False.

The "P" in the PICO acronym refers to the key characteristics of the people being interviewed.

a. True

b. False

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Answer to Question #5

a. True

Rationale: P stands for the Population or patients (What are key characteristics of the patients or people?).

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