



# Essentials of **Nursing Research** *A Practical Approach*

## Special Features

- First handbook on Nursing Research with a practical approach
- Useful for both Undergraduate and Postgraduate Nursing students
- Focus on evidence-based practice and ethical considerations
- Step-by-step guidance for writing research proposals and theses
- Extensive coverage of research tips and examples

*Foreword*  
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# Chapter 2

## Research Problem

### LEARNING OBJECTIVES

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*After studying the chapter, readers will be able to:*

- Understand the definitions of research problem.
- Explain the sources of research problem.
- Describe types and forms of research problem.
- Describe the criteria of good research problem.
- Enumerate the characteristics and types of research objectives.
- Explain the definition of hypotheses and types of hypotheses with examples.

### CHAPTER OUTLINE

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- Introduction
- Definition
- Identification of Research Problem
- Sources of Research Problem
- Types of Research Problems
- Problem Statement
- Criteria of a Good Research Problem
- Research Objectives
- Research Hypothesis

### KEY TERMS

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**Alternative hypothesis ( $H_1$ ):** A hypothesis that contradicts the null hypothesis, proposing that there is a significant difference or relationship between variables being studied.

**Directional hypothesis:** A hypothesis that specifies the direction of the expected relationship between variables.

**Non-directional hypothesis:** A hypothesis that does not specify the direction of the expected relationship between variables.

**Null hypothesis ( $H_0$ ):** A hypothesis stating that there is no significant difference or relationship between variables being studied.

**Research hypothesis:** A testable statement or prediction about the relationship between variables or the outcome of a study, often formulated based on existing theory or empirical evidence.

**Research objectives:** Specific, measurable, and achievable goals or outcomes that the researcher aims to accomplish through the study.

**Research problem:** The specific issue, concern or gap in knowledge that a research study aims to address. It provides the rationale for conducting the research and frames the research question.

**Research question:** A concise, clear, and focused inquiry that guides the research process by identifying what the researcher seeks to investigate or explore.

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## INTRODUCTION

The research problem is a statement concerning an area of interest. Further, research problem can be enhanced for its deeper insights. It operates as the base for the whole research process. It also includes a perplex question that exists in scholarly literature, theory or practice and the need for substantial understanding, meticulous examination, tangible explanation, clarification and solution. A research problem can be of a particular issue, contradiction or gap in knowledge that would aim to signify the research.

The research problem chosen relies upon the broad area or topic of interest and the type of research. While writing introduction or research proposal, formulate a problem statement or research question.

## DEFINITION

*“A problem represents the information acquired by a researcher and seeks solution for it.”*

—John Dewey

A research problem is defined as an area of interest that requires understanding of a specific topic, situation, inconsistency or hardship. Research problem helps in finding answers to questions. It strengthens existing findings to bridge the knowledge gap in order to solve problems.

## IDENTIFICATION OF RESEARCH PROBLEM

Research problems can be identified through universal social issues, phenomenon or concepts, which are worth to study and requires

further experimentation for its understanding. The research problems are identified through observation, knowledge and skills of the nurse researcher. In general, it is a laborious task for the novice researcher to conceptualize a research problem, whereas the research expertise can efficiently identify and test the research problems. Identification of a research problem can consume a lot of time and effort.

Formerly, in an overview of insightful broad area of research, the researcher should narrow down the area by selecting a particular topic. This can be done only after the thorough review of literature related to the research area. In quantitative research problems, the need is to explain and predict its outcome. In qualitative studies, the research problem focuses toward exploration of an event, process or phenomenon.

## **SOURCES OF RESEARCH PROBLEM**

Distinct sources help the nurse researcher to identify the research problems as jotted below:

### **Personal Experience**

Day-to-day personal experience of a researcher can be a good source of research problem. The researchers need to watch for everyday recurring problems and should critically examine the systematic evidence.

#### **Example**

Nurse researcher observes that primi mothers experience postpartum blues after childbirth. This type of personal experience may provide the base to recognize research problems.

### **Practical Experience**

Nurse researchers/scientists are exposed sufficiently in drafting research problems from clinical experiences. Practical experience is considered the source of research problem. Research problems can also be identified from clinical observations.

#### **Example**

Nurse researcher clinically observes that women are at greater risk for suicidal ideation compared to men. Such clinical experiences serve as an excellent source of significant research problem.

## Critical Appraisal of Nursing Literature

Concepts for research studies usually occur after reading and understanding nursing literatures. Published research reports and recommendations often assist in recognizing the problem area. Inconsistency research findings also build ideas for nursing studies. Replication of previous research work can also be carried out.

### Example

A nursing literature on higher prevalence of type 2 diabetes among men than women might be a very good source of research problem.

## Previous Research

Pitfalls in previous research can be investigated and tested further. Study refinement can be done based on previous research work. Replication of previous research work is also encouraged for the novice researcher.

## Existing Theories

Theories must be tested by means of research for its applicability in nursing practice environment through deductive process. Testing of existing theory serves as a good source of research problems.

### Example

Peplau hypothesized that nurse patient relationships should take place through three phases viz (1) Orientation, (2) Working and (3) Termination. Nurse researcher can further test this theory for its application in everyday nursing practice.

## Social Issues

Social health related issues are recommended as the source of research problem.

### Example

Poverty, unemployment, gendered violence, communalism, etc., are some of the social areas of research. Social elements or discrepant social problems are the basic source of research questions.

## Brainstorming

In brainstorming sessions, creative ideas are explored. Customarily, brainstorming discussions related to nursing studies can be conducted to explore innovations.

## Intuitions

Intuitions are the mental power to gain knowledge without analytic reasoning. Intuition and hunch are regarded as the fruitful source of research problems.

## Exposure to Field Situations

In the course of field work, nurse researcher primarily observes and then devises the research question.

## Consultation with Experts

Researchers often discuss the area of research interest with peers, research advisors or research expertise. Professional conferences can also be an ideal source of research perplexity for both quantitative and qualitative studies. Sometimes, faculty members may provide list of research topics to the students and make them to select an area. Faculty can even assign explicit topic to the students to be researched.

### Research Tips

#### For sources of research problem:

- Observe clinical practice closely.
- Pay attention to challenges, gaps or areas where improvements can be made in patient care.
- Often, these observations can inspire meaningful research questions that address real-world healthcare needs and contribute to evidence-based practice (EBP) in nursing.

## TYPES OF RESEARCH PROBLEMS

There are six types of research problems namely descriptive, relational, causal, theoretical, applied and action.

1. **Descriptive research problem:** Descriptive research problems focus on the situation, state or phenomena.

2. **Relational research problem:** This type of research problem signifies relationship between two or more variables need to be examined.
3. **Causal research problem:** Causal research problem discovers the cause-and-effect relationship.
4. **Theoretical research problem:** This sort of research problem explains the theoretical phenomenon and basic meaning. There is no need of hypothesis testing.
5. **Applied research problem:** This type of research problem deals with practical problems and has hypothesis testing.
6. **Action research problem:** Action research problem is sensitive and requires immediate solution in an emergency situation.

## PROBLEM STATEMENT

A problem statement is a brief assertion related to an issue. It provides the framework for the research study and constructs the questions. Problem statement recognizes the nature of the problem, background and its significance. It should address the research gap.

### Types of Problem Statement

Basically, there are two types of problem statements, viz. quantitative and qualitative.

#### 1. Quantitative Problem Statement

In a quantitative problem statement, the elements are as follows:

- |                                 |                          |
|---------------------------------|--------------------------|
| • Problem recognition           | • Outcome of the problem |
| • Background/context            | • Knowledge gaps         |
| • Scope of the research problem | • Projected solution     |

#### Examples

**Problem statement on positioning and aerosol therapy on ventilator derived parameters for mechanically ventilated patients:**

- Acute respiratory distress syndrome is the predominant cause of death in ICU. Mechanical ventilation is the mainstay management for ARDS (Slutsky AS & Rittayamai N, 2015). Inspecting respiratory system is the fundamental daily routine of ICU care of mechanically ventilated patients. It primarily includes consecutive assessment of gas exchange, respiratory system mechanics and positive pressure ventilation (Eric Kipnis, 2012).

Contd...

- Early prone positioning increases survival in patients (Guerin et al., 2013). Still, there is no guideline in nursing practice to position patients. Reviews examined the nursing application related to prone positioning among ventilated patients, clinically diagnosed with respiratory failure, acute lung injury or ARDS (Hanan Mohammed, 2018).
- There is only few confined evidence on usage of nebulized antibiotics in ventilated patients (Sole Lleonart C, 2017). The effectiveness of aerosol therapy on patient-centered outcome is uncertain (Hassan NA, Awdallah FF, 2018). The jet nebulizers are very limited in clinical usage owing to its high residual volume.
- Nurses play a key role in continuous management of mechanically ventilated patients like position and comfort.

## 2. Qualitative Problem Statement

A qualitative problem statement is often stated and drafted broadly. It signifies the general purpose of the study. Building a qualitative problem starts with the recognition of general topic or area. The general topic is also called the focus of inquiry. The qualitative researcher collects data and explores the new meaning in it. Step by step, the general topic narrows down to more specific topic and further new questions emerge.

### Example

#### Lived experience of postpartum distress in women

Women experience an extent of psychological issue after childbirth. It includes anxiety, blues, depression, psychosis and adjustment disorder. Qualitative research work on women's experience of postnatal mental health issues is not acknowledged hitherto as potential psychological problems.

#### Exercise on writing statement of problem

**Topic:** Influence of nurse-patient communication on patient satisfaction in emergency department.

#### Instructions:

1. Read the following paragraph describing a general topic area in nursing studies.
2. Identify a specific research problem within this topic.
3. Write a statement of the problem that clearly defines the issue and its significance in the context of nursing practice and patient care.



**Paragraph:**

Effective communication between nurses and patients is essential for promoting patient satisfaction and positive healthcare experiences, particularly in emergency departments (EDs) where patients may be experiencing acute distress or uncertainty. Nurse-patient communication encompasses various aspects, including clear and empathetic communication of information, active listening, and responsiveness to patient needs and concerns. Positive nurse-patient communication has been associated with improved patient outcomes, increased adherence to treatment plans, and higher levels of patient satisfaction. However, challenges such as time constraints, high patient volumes, and language barriers may impact the quality of nurse-patient communication in ED settings.

## Forms of Problem Statement

There are essentially two forms of problem statement namely declarative and interrogative.

1. **Declarative form:** Customarily most of the researchers prefer declarative form. Declarative forms are written as statements.

**Example**

A study to assess and compare the level of mother child bond between normal delivery versus cesarean section among primi mothers.

2. **Interrogative form:** Interrogative problem statements are written in question form.

**Example**

Is there any significant difference in mother child bond between normal delivery versus cesarean section among primi mothers?

## Research Tips

**For writing research problem:**

- Be clear and specific.
- Ensure that the research problem statement describes the main issue or question that the researcher intend to address in the study.
- Ensure that the research problem carries clarity and help to guide the direction of the undertaken research and enable the researcher to develop focused research objectives and hypotheses.



## STUDENT ASSIGNMENT

### LONG ANSWER QUESTIONS

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1. How will the investigator frame the quantitative and qualitative research problem?
2. Define research objectives. Write about the types of research objectives. What is the importance of research objective?
3. Explain the research hypothesis. Give an overview of the types with examples.

### SHORT ANSWER QUESTIONS

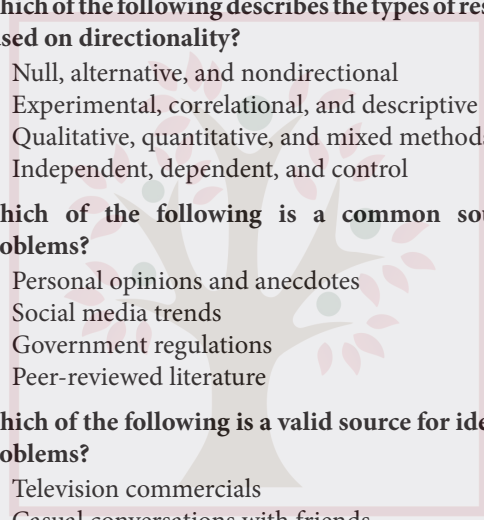
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1. Define research problem.
2. Write the types of research problem.
3. Define research objectives.
4. List the types of research objectives.
5. Define hypothesis.
6. What are the sources of research problem?
7. What is the criteria of good research problem?

### MULTIPLE CHOICE QUESTIONS

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1. **What is the primary purpose of identifying a research problem in nursing?**
  - a. To make the research process more complex
  - b. To provide a general topic for investigation
  - c. To limit the scope of the research project
  - d. To guide the selection of research questions and objectives
2. **What is the main function of research objectives in a study?**
  - a. To provide a summary of previous research
  - b. To outline the methodology of the study
  - c. To identify the significance of the research
  - d. To specify the goals and aims of the study

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3. **What is the role of a research hypothesis in a study?**
    - a. To summarize existing literature
    - b. To outline the research methodology
    - c. To suggest potential research questions
    - d. To propose a testable explanation for an observed phenomenon
  4. **Which of the following describes the types of research hypotheses based on directionality?**
    - a. Null, alternative, and nondirectional
    - b. Experimental, correlational, and descriptive
    - c. Qualitative, quantitative, and mixed methods
    - d. Independent, dependent, and control
  5. **Which of the following is a common source of research problems?**
    - a. Personal opinions and anecdotes
    - b. Social media trends
    - c. Government regulations
    - d. Peer-reviewed literature
  6. **Which of the following is a valid source for identifying research problems?**
    - a. Television commercials
    - b. Casual conversations with friends
    - c. Academic conferences and journals
    - d. Social media posts

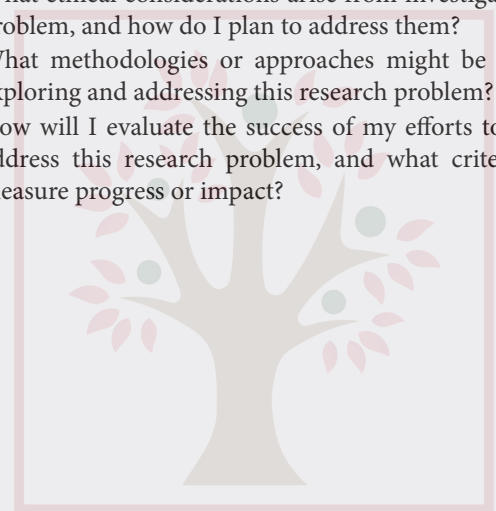
## **REFLECTIVE QUESTIONS—RESEARCH PROBLEM**

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High rates of nurse burnout and its impact on patient safety and quality of care in critical care units.

1. What led me to identify this particular research problem in nursing?
2. How does this research problem align with my interests, expertise, and the needs of the nursing profession?
3. What evidence or experiences informed my understanding of this research problem?
4. How does this research problem relate to broader issues or challenges within healthcare or nursing practice?
5. What stakeholders are affected by or involved in this research problem, and what are their perspectives?

6. What are the potential implications of addressing or not addressing this research problem for nursing practice, patient outcomes, and healthcare systems?
7. How does this research problem contribute to filling gaps in nursing knowledge or addressing unanswered questions?
8. What ethical considerations arise from investigating this research problem, and how do I plan to address them?
9. What methodologies or approaches might be most effective in exploring and addressing this research problem?
10. How will I evaluate the success of my efforts to understand and address this research problem, and what criteria will I use to measure progress or impact?



Nursing Knowledge Tree  
An Initiative by CBS Nursing Division

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**ANSWER KEY**

1. d    2. d    3. d    4. a    5. d    6. c

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# Essentials of Nursing Research

A Practical Approach

## Salient Features

- Covers both fundamental and advanced concepts of nursing research, including design, sampling, data collection, and statistical analysis.
- Emphasizes evidence-based practice, ethical considerations, and integration of research into clinical decision-making.
- Aligned with the latest curricula prescribed by Indian Nursing Council and universities. Ideal for both undergraduate and postgraduate nursing students.
- Written in simple, student-friendly language with diagrams and real-life practical examples.
- Provides clear guidance on writing research proposals, reports, and theses.

Important **Learning Objectives** are enumerated to help readers understand the purpose of the chapter.

### LEARNING OBJECTIVES

After studying the chapter, readers will be able to:

- Understand the definitions and significance of research.
- Explain the purposes of research.

**Research Tips** are placed across the chapters to support your practical understanding.

### Research Tips

For designing quantitative research:

- Select the appropriate quantitative study design.
- Depending on the research question and objectives, choose between

Each chapter concludes with a **Summary** that offers a quick recap at a glance.

### SUMMARY

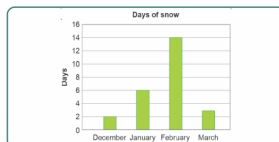
- Research begins with defining research as a systematic inquiry aimed at generating knowledge.

**Chapter Outline** is given to provide the readers a glimpse of entire chapter.

### CHAPTER OUTLINE

- Introduction
- Definitions of Research
- Significance of Research
- Purposes of Research
- Nursing Research

Studded with 200+ fully colored **Figures and Illustrations** for easy grasp of the relevant topic.



Numerous **Tables** are used to clarify the concept and make the reading enjoyable and informative.

**Table 1.1:** Steps involved in scientific methods

Steps	Description
1. Observation	Identify a phenomenon or question based on empirical observations.

Important **Key Terms** are presented to familiarize the readers with the important terminologies.

### KEY TERMS

**Evidence-based practice (EBP):** The process of informing decisions in healthcare practice by integrating patient preferences and values, professional competence, and the best available research information.

**Student Assignment** section contains long and short answer questions and multiple choice questions to help students attain mastery over the concepts studied in the chapter.



### LONG ANSWER QUESTIONS

1. Define randomization. Describe the characteristics of research design.

### SHORT ANSWER QUESTIONS

1. Define research design.

### MULTIPLE CHOICE QUESTIONS

1. What type of research design involves the collection of data from

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