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# NURSING RESEARCH MADE EASY



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*Foreword*
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# Overview of Research Process

Unit 2

- Steps in Research Process
- Types of Research
- Ethics in Nursing Research
- Ethical Dilemma
- Health Systems Research and Social Research
- Concept of Evidence-based Practice
- Models and Theories for EBP

## OBJECTIVES

At the conclusion of this unit, the learner will be able to:

- Discuss the steps in research process.
- Explain the types of research.
- Mention the ethical issues.
- Describe the ethical dilemma.
- Discuss about health and social research.
- Explain about the evidence-based practice.

**Key terms**

| | |
|---|---|
| Pilot study | EBP |
| Ethical dilemma | Social research |
| Basic research | Sample |
| Applied research | Design |

## INTRODUCTION

Research process is a step-by-step process necessary to carry out the research activity more effectively. Research is a process because

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in some sense it is never finished. The process begins with interest sparked by an observation or question, the desire to discover and learn more, and to come to a new understanding because of what has been discovered.

## STEPS IN RESEARCH PROCESS

The steps of the quantitative research process are briefly reviewed under the following phases:

1. The conceptual phase
2. The design and planning phase
3. The empirical phase
4. The analytical phase
5. The dissemination phase

**These steps are being discussed as follows:**

### 1. The conceptual phase

1. Formulating and delimiting the problem
2. Reviewing the related literature
3. Undertaking clinical field work
4. Defining the theoretical framework
5. Formulating the hypothesis

### 2. The designing and planning phase

6. Selecting the research design
7. Developing a protocol for intervention
8. Identifying the population to be studied
9. Specifying the methods to measure the research variable
10. Designing the sampling plan
11. Finalizing and reviewing the research plan
12. Conducting pilot study and making revision.

### 3. The empirical phase

13. Collecting the data
14. Preparing the data for analysis

### 4. The analytical phase

15. Analyzing the data
16. Interpreting the result

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**5. The dissemination phase**

17. Communicating the finding
18. Utilizing the finding

*1. Formulating and delimiting the problem*

The first step of the research process is to identify the study problems from personal experiences, literary sources, previous research, or through the testing of theories. The problem should be based on the interest of the researcher and should be significant to nursing.

*2. Reviewing the related literature*

Research should build on previous knowledge. It is important to determine what knowledge exists of the study topic. Literary sources can be located through the library card catalog, indexes, abstracts, and computer-assisted searches. It helps to develop a theoretical or conceptual framework for a study, to plan study methods, instruments or discover tools and to update information on the study topic.

*3. Undertaking clinical field work*

It is an important method in research process for acquiring knowledge regarding the topic. The nurse researcher will conduct a field work to get an idea regarding the topic and to explore the basis of the problem.

*4. Defining the theoretical framework*

Theoretical framework can be used as a basis for generating predictions that can be tested through empirical research. A framework is the abstract for the study that enables the researcher to link the findings to nursing body of knowledge. It is a testable theory.

*5. Formulating the hypothesis*

Hypothesis is a statement of researcher's expectations about relationships between the variables of investigation. Hypothesis predicts the outcomes. Hypothesis is an assumed statement suggesting an answer to a question which may or may not be true.

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*6. Selecting the research design*

The research design is to plan for how the study will be conducted. It is a systematic plan to obtain answer for the research question. It is the blueprint of the entire study. There are different types of research designs, such as experimental, quasi-experimental or non-experimental research design.

*7. Develop a protocol for intervention*

After selecting the research study, make a protocol. Protocol helps to carry out the research study. It should contain what is the method, how to carry out the study and the sampling criteria.

*8. Identify the population to be studied*

The term 'population' refers to the aggregate or totality of all the objects, members that confirm to a set of specifications. The researcher identifies the population during the planning phase. The researcher must know the characteristics of the study participants.

*9. Specify the methods to measure the research variable*

The researcher must develop a method to observe and measure research variable as accurately as possible. A variety of quantitative data collection approaches exist, e.g. bio-physiological measurements, self-reports, observation. The data collection method may vary according to the research question and methodology.

*10. Designing the sampling plan*

The entire population cannot be studied; researcher uses a small fraction of the population, i.e. sample. The researcher employs many methods to obtain the sample. The commonly used methods of sampling are probability and non-probability sampling techniques.

*11. Finalizing and reviewing the research plan*

Researcher must finalize the research plan by individuals, groups before the actual implementation. The researcher must have his/her research plan approved by special committees as to ensure that the plan does not violate ethical principles.

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*12. Conduction of pilot study and making revision*

Pilot study is the small scale rehearsal of the major study. The primary focus of the pilot study is to assess the adequacy of the data collection plan. The researcher needs to know the adequacy of the technical equipment. The tool for data collection is validated and is termed as pretesting. Pilot study should be carried out with care as a major study. The pilot study subjects should be chosen from the same population as of the main study.

*13. Collecting the data*

Data collection should be a systematic process. What data will be collected? How will the data be collected? Who will collect the data? Where will the data be collected? When will the data be collected?

*14. Preparing the data for analysis*

Organize the data for tabulation and evaluation. Plan for organizing the data should be made before data collection begins. Plan for analyzing the data should also be made before obtaining the data. Determine what data are needed for a study and what statistical procedures will be appropriate to analyze the data.

*15. Analyzing the data*

After preparing the data for analysis, quantitative information should be analyzed based on the various statistical measures. Analysis of the data includes descriptive and inferential statistical methods. Numerical data must be organized in an orderly and sequential manner.

*16. Interpreting the result*

Interpretation of the research findings is based on the study hypothesis or research questions. Determine whether the data support the research hypothesis and also compare with those of the previous studies.

*17. Communicating the finding*

The results of research finding are of no use if they are not communicated. The final task of the project is to prepare research report. The reports could take various forms as papers, dissertations, journal articles, and professional conferences.

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*18. Utilizing the finding*

Researcher should get involved in implementing the findings of his or her study. It can be used as an evidence before going to practice.

## TYPES OF RESEARCH

The common types of researches are:
1. Basic research
2. Applied research
3. Quantitative research
4. Qualitative research

### Basic Research

It is also termed as 'pure' research, which is a scientific investigation that involves the 'generation of knowledge for knowledge sake' or for the pleasure of learning and finding the truth.

### Applied Research

Applied research is a scientific investigation conducted to answer a clinical question or solve a practice-related problem and to refine and utilize the knowledge generated from basic research.

### Quantitative Research

In this type of research the data is collected in numerical form and analyzed by using descriptive and inferential statistics. Quantitative research involves analysis of numerical data.

### Qualitative Research

In this type of research, it involves an indepth understanding of the human behavior and the reasons to govern human behavior. Qualitative research involves analysis of data, such as words, pictures, objects, etc.

## ETHICS IN NURSING RESEARCH

Ethics is a system of moral values that is concerned with the degree to which research procedures adhere to professional, legal, and social obligations to the study participants. The nursing research involving human subjects has led to ethical concerns and debates regarding the protection of the study participants in nursing research.

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### Historical Background

As modern civilized people, we might think that violation of moral principles occurred centuries ago rather than in recent times, but this is not the case. The common movements:

The Nazi medical experiments of the 1930s and 1940s – the most famous example of disregard for ethical conduct – prisoners of war and rational enemies were used to test the limits of human endurance and human reaction to diseases and untested drugs. Many such examples of studies have emerged to give ethical concerns the high visibility they have today.

Code of Ethics is one of the first internationally recognized ethical standards, referred to as the Nuremberg Code in 1947 – developed after the Nazi atrocities were made public in the Nuremberg trials, the most notable among the many other international standards.

### Declaration of Helsinki's Report in 1954

Patient's Bill of Rights in 1973 addresses about informed consent, privacy and confidentiality.

### Belmont Report in 1974

**Ethical principles**

**The ethical principles are:**

**1. Principle of beneficence**

a. Freedom from harm
b. Freedom from exploitation
c. Risk-benefit ratio

**2. Principle of respect for human dignity**

a. Right to self-determination
b. Right to full disclosure
c. Informed consent

**3. Principle of justice**

a. Right to fair treatment
b. Right to privacy (confidentiality and anonymity)

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These ethical principles are being discussed as follows:

### 1. Principle of Beneficence

*Freedom from harm:* Researchers should minimize all types of harm (physical, psychological, social and economical) and discomfort to achieve a balance between the potential benefits and risks of being a participant.
*Freedom from exploitation:* Study participants should not be placed in situations for which they are not being prepared.
*The risk/benefit ratio:* There may be some direct and indirect benefits of research and people who agree to participate are for a number of reasons. Researcher should try to maximize the benefits from research by assessing the risk/benefit ratio. All research involves risk but needs to be minimal.
*Right to self-determination:* The human being should be treated as autonomous agents, who have the freedom to conduct their lives as they choose without external controls.
*Right to full disclosure:* It is the study participants' right to make informed voluntary decisions about participation
*Informed consent:* This means the study participants have adequate information regarding the researches, capability to comprehend the information and have the power of free will enabling them to consent or decline participation.
*Right to fair treatment:* Study participants have the right to receive fair and equitable treatments before, during and after their participation in the study.
*Right to privacy:* All researches with human beings intrude into personal lives – this intrusion should be self-limited, the data provided by the study participants should be held in strict confidence through anonymity and other confidentiality procedures.

## ■ ETHICAL DILEMMA

The application of ethical principles to health care is referred to as bioethics. Ethics affect every area of health care, including direct care of the client, allocation of finances and utilization of the staff. Ethics do not provide easy answer but they can help to provide structure by raising questions that ultimately lead to answers.

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Ethical dilemma occurs when there is conflict between two or more ethical principles. Ethical dilemma is a situation of conflicting requirements in that there are no right or wrong options. The most beneficial decision depends upon the circumstances.
When an ethical dilemma occurs, the nurse must make a choice between two alternatives that are equally unsatisfactory.

## HEALTH SYSTEMS RESEARCH AND SOCIAL RESEARCH

### Health Systems Research

Health Systems Research improves the health of the people and the community by enhancing the efficiency and effectiveness of health system. It is delivered to the common people through:

- National level
- State level
- District level
- Divisional level
- Village level

### Functions of Health Systems Research

- Creating sufficient resources
- Financing
- Essential cost-effective services
- Responsiveness of the patient's needs
- Proper health

### Social Research

Social research is the scientific study of society. It determines the relationship between one or more variables. It helps to examine societies' attitude, beliefs, etc.
Social research is defined as a systematic method of exploring, analyzing and conceptualizing social life in order to extend, correct or verify knowledge whether that knowledge aids in the construction of theory or in the practice of an art.

### Purposes of Social Research

- To explore social reality for its own sake
- To explain social life by providing information
- To evaluate social issues
- To understand human behavior

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### Stages of Social Research (steps)

1. Choose the research problem
2. Formulate research design
3. Gather the data
4. Analyze the data
5. Interpret the result

## EVIDENCE-BASED PRACTICE

Evidence-based practice (EBP) is a strategy that integrates research and practice. Although it contributes significantly to the practice of the profession, evidence is information acquired through scientific evaluation of practice. Evidence-based nursing practice refers to the incorporation of evidence from research, clinical expertise, client preferences and other available resources to make decisions about the client. In nursing practice, evidence comes from both experimental and non-experimental studies. Reflecting upon the development of nursing practice showed that it has moved from theory based on 1950s followed by the extended growth of research in nursing in the 1980s and now in the 21st century, evidence-based practice has been adopted and utilized in the nursing practice.

### Definitions

Evidence-based practice (EBP) has been described as 'the integration of best research evidence with clinical expertise and patient values'.

Evidence-based nursing is much more than critiquing research studies to determine what results to apply to the nursing practice.
*(Thompson 2004)*

Evidence-based nursing is a systematic process that uses current evidences in making decisions about the care of the patient, including evaluation of the quality and applicability of existing research, patient preferences, cost, clinical expertise and clinical finding.

### Importance

- Evidence-based nursing practice helps to improve quality of nursing care and is the best service to the patient.

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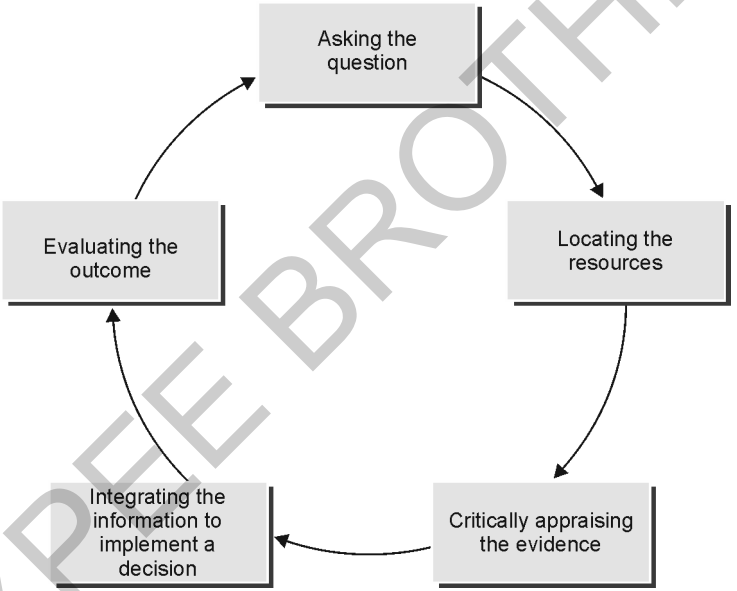
- Evidence-based nursing practice promotes practices that have better outcome and are scientifically proven to be effective.
- It aims to eliminate unsound or risky nursing practices, thus promoting a patient's safety.
- It helps to keep the nurses' knowledge up-to-date.
- It enhances professional practices.
- It achieves cost-effective nursing care.
- It optimizes a patient's outcomes.

**Steps in Evidence-based Practice**




**Step I: Asking the questions**

Search the research evidence requires a structured approach. When a problem or question has been identified, it must be phrased as a question that can be answered.

For example, a nurse might wonder whether placing items, such as call-bells and urinals in a stroke-patient's unaffected visual field is more effective than placing them in the affected visual field.

**Step II: Locating the resources**

When a clinical question is formulated, the search for answers

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begins with locating the resources that will provide the evidence to address the clinical question.

The skills required for achieving these steps are:

- Computer skills
- Library resources
- Electronic data devices
- Internet resources
- Sharing resources (from other specialities)

**Step III: Critically appraising the evidence**

Review each of the relevant references. A decision must be made whether the intervention is good or not. Eliminate the irrelevant facts.

**Step: IV: Integrating information to implement a decision**

Integrate all the relevant facts. It should be based on clinical experiences and the patient references.

**Step V: Evaluating the outcome**

When a decision is made regarding the recommendation for practice and the next step is to recommend implementing the interventions.

**Barriers to Evidence-based practice**

Barriers to evidence-based practice can be categorized as follows:

*Individual barriers*

- Lack of time
- Clinical nurse do not understand the importance of research
- Lack of knowledge and skilled person

*Organizational barriers*

- Lack of administrative set-up
- Lack of incentives
- Lack of funds

*Environmental barriers*

- Government policy
- Cultural changes

*Educational barriers*

- Lack of training
- Lack of availability of resources

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## MODELS AND THEORIES FOR EBP

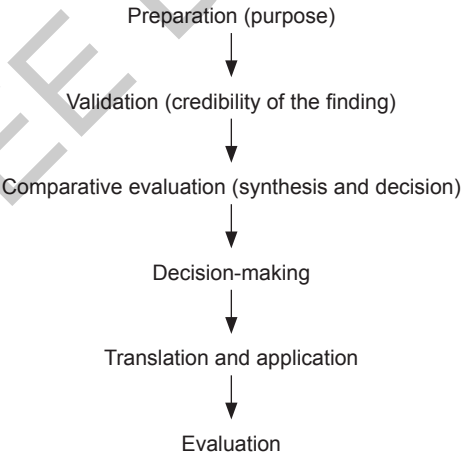
A number of different models and theories of EBP have been developed. These models offer framework for understanding the EBP process and for designing and implementing an EBP project in a practice setting. Some models focus on the use of research from the perspective of individual clinicians, whereas some focus on institutional EBP efforts. Models that offer a framework for launching an EBP effort include the following:

### 1. The CURN Model

The conduct and utilization of research in nursing (CURN) project was designed to develop and test a model for the utilization of research-based on knowledge in the clinical practice setting.
The model exemplifies a structural and formal organizational process that requires organizational commitment and research utilization.

### 2. The Stetler Model

The Stetler Model of research utilization applies research findings at the individual practitioner level. The model has 6 phases:




Although each model offers different perspectives on how to translate research findings into practice, several steps and procedures are similar across the models. The most prominent of these models have been the diffusions of innovation theory, the Stetler model and Iowa model.

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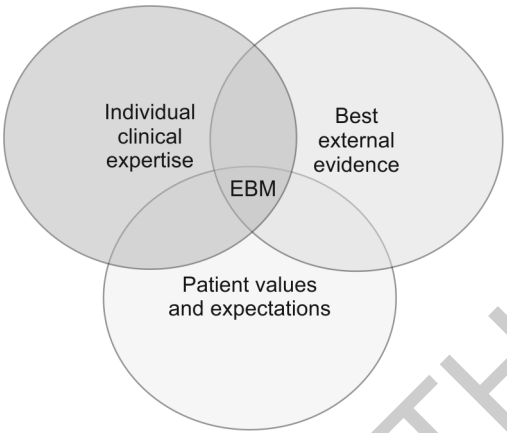
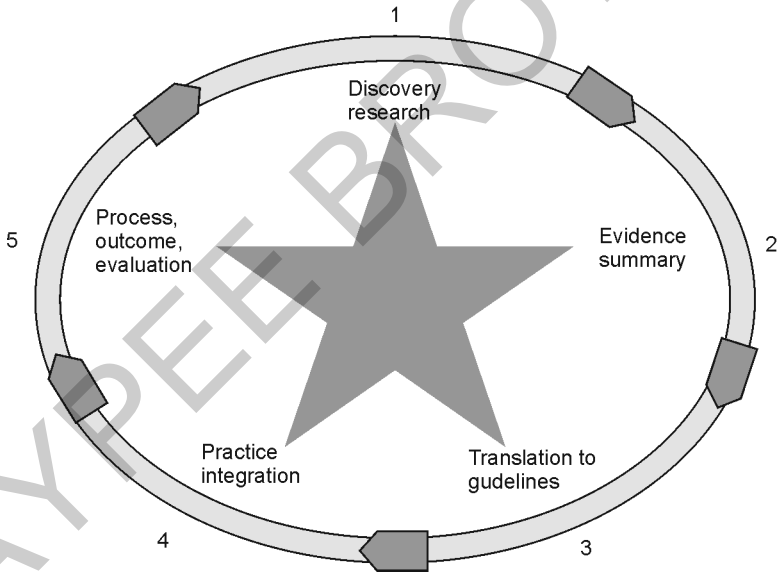



### 3. The ACE Star Model

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**QUESTIONS**

1. **Define research and ethical issues in nursing.**
   *(RGUHS, June 2009)*
2. **Describe the ethical dilemmas in conducting research.**
   *(RGUHS, MSc 2007)*
3. **Discuss the ethics in nursing research.**
   *(RGUHS, MSc 2008)*

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# NURSING RESEARCH MADE EASY

A book specially designed for BSc, PC BSc and MSc nursing students. The entire syllabus is scrutinized into 14 units including the previous years' question papers. The students get an idea of all the topics in a nutshell necessary for their research work. All the topics are described in a simple and easily understandable manner.

- The flow charts and the pictorial representations help the students to capture all the essence of the topics in such a way that they can use them for the preparation of their examinations.
- The tables, graphs, classifications and calculations mentioned in the book are in detail and which may not be found in any other research book.

**Renjith Augustine**, a triple postgraduate, obtained his Masters of Science in Psychiatric Nursing from Rajiv Gandhi University, Bengaluru, Karnataka, India in 2012. He completed his BSc Nursing from Mahatma Gandhi University, Kottayam, Kerala, India during 2004–2008 (LFCON). He has completed his MSc in Psychology from University of Madras, Chennai, Tamil Nadu, India; Postgraduate Diploma in Biostatistics from Madurai Kamaraj University, Madurai, Tamil Nadu; and Postgraduate Diploma in Diabetes Education from Bangalore Diabetes Hospital, Bengaluru, Karnataka, India. He is a life member of Trained Nurses Association of India (TNAI) and Indian Psychiatric Nurses Association. He has participated in various National and International workshops and conferences. He is actively associated with the field of Nursing Management, Psychiatric Nursing, Psychology, Research and Statistics.

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