Nursing Education and Research

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LEARNING OBJECTIVES

After mastering the contents of this lecture, the student should be able to:

1. Define the terminologies.
2. Describe the Educational Preparation for Nursing Practice
3. Explain the Practical and Vocational Nursing Education
4. Describe the Graduate Education in Nursing
5. List the Methods of Conducting Nursing Research
6. Reporting Protection of the Rights of Human Subjects

TERMINOLOGIES

- Applied research
- Basic research
- Continuing Education
- Informed consent
- Licensed practical nurse
- Nursing research
- Qualitative research
- Quantitative research
- Registered nurse
- Applied research
- Basic research
- Continuing Education
- Informed consent
- Licensed practical nurse
- Nursing research
- Qualitative research
- Quantitative research
- Registered nurse
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Educational Preparation for Nursing Practice

Educational preparation for nursing practice involves several different types of programs that lead to licensure or the legal authority to practice as a nursing professional.

Students may choose to enter a practical nursing program and become a licensed practical nurse (LPN), or they may enter a diploma, an associate degree, or a baccalaureate program to be licensed as a registered nurse (RN).

Various levels of nursing education are providing programs for educational advancement. For example, the LPN can complete an associate degree and become an RN, and the RN prepared at the diploma or associate degree level can attain a bachelor of science in nursing (BSN) degree.

There are also programs that provide RN-to-master's degrees as well as BSN and master's degree-to-PhD. Graduate programs in nursing provide masters and doctoral degrees.

Educational preparation for the nurse has become a major issue in nursing.

The multiple methods of preparation are:

1. Confusing to employers.
2. Consumers of healthcare services, and nurses themselves.

Practical and Vocational Nursing Education

Practical (vocational) nursing programs were established to teach graduates to give bedside nursing care to patients.

Schools for practical nursing programs are located in varied settings, such as:

High schools,
Technical or vocational schools,
Community colleges, and
Independent agencies
Most programs are 1 year in length, divided into one-third classroom hours and two-thirds clinical laboratory hours.

**LPNs work under the direction of a physician or RN:**
1. To give direct care to patients,
2. Focusing on meeting healthcare needs in hospitals,
3. Nursing homes, and
4. Home health agencies.

**Registered Nursing Education**

Three types of educational programs lead to licensure as an RN:
1. Diploma,
2. Associate degree, and
3. Baccalaureate programs.

**Table (1) summarizes the types of education for RNs**

<table>
<thead>
<tr>
<th>Diploma</th>
<th>Associate Degree</th>
<th>Baccalaureate</th>
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<tbody>
<tr>
<td>Location</td>
<td>Hospital</td>
<td>Community college</td>
</tr>
<tr>
<td>Length</td>
<td>24–36 mo</td>
<td>2 academic or calendar years</td>
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<tr>
<td>Course work</td>
<td>Biologic science</td>
<td>Basic sciences</td>
</tr>
<tr>
<td></td>
<td>Physical science</td>
<td>Social sciences</td>
</tr>
<tr>
<td></td>
<td>Nursing theory</td>
<td>General education</td>
</tr>
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<td></td>
<td>Nursing practice</td>
<td>Nursing theory</td>
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<tr>
<td>Clinical component</td>
<td>Both hospital and community settings</td>
<td>Both hospital and community settings</td>
</tr>
<tr>
<td>Further education opportunity</td>
<td>If affiliated with a college, may transfer some credit toward a bachelor of science in nursing (BSN) degree</td>
<td>Credits often apply toward a bachelor of science in nursing (BSN) degree</td>
</tr>
<tr>
<td>Competencies on graduation</td>
<td>Plans and gives direct care to patients in structured settings</td>
<td>Plans and gives direct care to patients in structured settings</td>
</tr>
<tr>
<td></td>
<td>Works with other members of the healthcare team to plan and provide care to ill patients</td>
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</table>
Graduate Education in Nursing

The two levels of graduate education in nursing are the master's and doctoral degrees.

A master's degree prepares advanced practice nurses to function in educational settings, in managerial roles, as clinical specialists, and in various advanced practice areas.

Nurses with doctoral degrees meet requirements for academic advancement and organizational management. They also are prepared to carry out research necessary to advance nursing theory and practice.

Table (2) expanded educational and career roles of nursing

<table>
<thead>
<tr>
<th>Title</th>
<th>Description</th>
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<tbody>
<tr>
<td>Clinical nurse specialist</td>
<td>A nurse with an advanced degree, education, or experience who is considered to be an expert in a specialized area of nursing; carries out direct patient care; consultation; teaching of patients, families, and staff; and research</td>
</tr>
<tr>
<td>Nurse practitioner</td>
<td>A nurse with an advanced degree, certified for a special area or age of patient care; works in a variety of healthcare settings or in independent practice to make health assessments and deliver primary care</td>
</tr>
<tr>
<td>Nurse anesthetist</td>
<td>A nurse who completes a course of study in an anesthesia school; carries out preoperative visits and assessments; administers and monitors anesthesia during surgery; and evaluates postoperative status of patients</td>
</tr>
<tr>
<td>Nurse-midwife</td>
<td>A nurse who completes a program in midwifery; provides prenatal and postnatal care; and delivers babies for women with uncomplicated pregnancies</td>
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<tr>
<td>Nurse educator</td>
<td>A nurse, usually with an advanced degree, who teaches in educational or clinical settings; teaches theoretical knowledge and clinical skills; conducts research</td>
</tr>
<tr>
<td>Nurse administrator</td>
<td>A nurse who functions at various levels of management in healthcare settings; is responsible for the management and administration of resources and personnel involved in giving patient care</td>
</tr>
<tr>
<td>Nurse researcher</td>
<td>A nurse with an advanced degree who conducts research relevant to the definition and improvement of nursing practice and education</td>
</tr>
<tr>
<td>Nurse entrepreneur</td>
<td>A nurse, usually with an advanced degree, who may manage a clinic or health-related business, conduct research, provide education, or serve as an adviser or consultant to institutions, political agencies, or businesses</td>
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</table>
Continuing Education

The ANA defines continuing education as those professional development experiences designed to enrich the nurse's contribution to health.

Colleges, hospitals, voluntary agencies, and private groups offer formal continuing education through courses, seminars, and workshops.

In-Service Education

Many hospitals and healthcare agencies provide education and training for employees of their institution or organization, called in-service education.

This is designed to increase the knowledge and skills of the nursing staff. Programs may involve learning, for example, a specific nursing skill or how to use new equipment.

Nursing Research

Research most simply defined means to examine carefully or to search again. Research as scientific inquiry is a process that uses observable and verifiable information (data), collected in a systematic manner, to describe, explain, or predict events.

Research is conducted to validate and refine current knowledge or to develop new knowledge. The goals of research are to develop explanations (in theories) and to find solutions to problems.

Nursing research, broadly defined, encompasses both research to improve the care of people in the clinical setting and also the broader study of people and the nursing profession, including studies of education, policy development, ethics, and nursing history.
Methods of Conducting Nursing Research

1. Quantitative Research Methods

Quantitative research involves the concepts of basic and applied research.

Basic research, sometimes called pure or laboratory research, is designed to generate and refine theory, and the findings are often not directly useful in practice.

Applied research, also called practical research, is designed to directly influence or improve clinical practice.

Definitions of important terms for quantitative research

- **Variable**: Something that varies and has different values that can be measured
- **Dependent variable**: The variable being studied, determined as a result of a study
- **Independent variable**: Causes or conditions that are manipulated or identified to determine the effects on the dependent variable
- **Hypothesis**: Statement of relationships between the independent and dependent variables that the researcher expects to find
- **Data**: Information the researcher collects from subjects in the study (expressed in numbers)
- **Instruments**: Devices used to collect and record the data, such as rating scales, pencil and paper tests, and biologic measurements. Instruments should be both reliable (produce the same results [data] on repeated use) and valid (test what they are supposed to test).

The types of quantitative research depend on the level of current knowledge about a research problem. Table (3) describes the various types.

<table>
<thead>
<tr>
<th>Type</th>
<th>Purpose</th>
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<tbody>
<tr>
<td>Descriptive Research</td>
<td>To explore and describe events in real-life situations, describing concepts and identifying relationships between and among events. Often used to generate new knowledge about topics with little or no prior research.</td>
</tr>
<tr>
<td>Correlational Research</td>
<td>To examine the type and degree of relationships between two or more variables. The strength of the relationship varies from a -1 (perfect negative correlation, in which one increases as the other decreases) to a +1 (perfect positive correlation, with both variables increasing or decreasing together).</td>
</tr>
<tr>
<td>Quasi-experimental Research</td>
<td>To examine cause-and-effect relationships between selected variables. Often conducted in nursing to examine the effects of nursing interventions on patient outcomes.</td>
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<tr>
<td>Experimental Research</td>
<td>To examine cause-and-effect relationships between variables under highly controlled conditions. These are often conducted in a laboratory setting.</td>
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</table>
The steps of quantitative research are followed carefully, although they may be designed in different ways. The basic steps of the quantitative research process are outlined and described briefly in Table (4).

![Step Description](image)

<table>
<thead>
<tr>
<th>Step</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. State the research problem.</td>
<td>Often stated as a question, the problem should be focused narrowly on the problem being studied. For example: “What is the optimal time for taking a rectal temperature with a digital thermometer?”</td>
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<tr>
<td>2. Define the purpose of the study.</td>
<td>The purpose explains “why” the problem is important and what use the findings will be.</td>
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<td>3. Review related literature.</td>
<td>The literature review provides information about what is already known, provides information about concepts, and how the concepts have been measured. It also identifies gaps in knowledge that will be studied.</td>
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<tr>
<td>4. Formulate hypotheses and variables.</td>
<td>Hypotheses are statements about two or more concepts or variables. Variables are concepts of varying levels of abstraction that are measured, manipulated, or controlled in a study.</td>
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<tr>
<td>5. Select the research design.</td>
<td>The design is a carefully determined, systematic, and controlled plan for finding answers to the question of the study. This provides a “road map” for all aspects of the study, including how to collect and analyze the data.</td>
</tr>
<tr>
<td>6. Select the population and sample.</td>
<td>The population is the group to be studied. The sample refers to specific people or events in the population from which data will be collected.</td>
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<tr>
<td>7. Collect the data.</td>
<td>Sources of data may include people, literature, documents, and findings (for example, from sources such as laboratory data or measurements of vital signs). Data may be collected from interviews, questionnaires, direct measurement, or examinations (such as physical or psychological tests).</td>
</tr>
<tr>
<td>8. Analyze the data.</td>
<td>Statistical procedures are used to analyze the data and provide answers to the research question.</td>
</tr>
<tr>
<td>9. Communicate findings and conclusions.</td>
<td>Through publications and presentations, the researcher explains the results of the study and links them to the existing body of knowledge in the literature. The researcher also describes the implications of the study and suggests directions for further research.</td>
</tr>
</tbody>
</table>

2. Qualitative Research Methods

Qualitative research is a method of research conducted to gain insight by discovering meanings. It is based on the belief that reality is based on perceptions, which differ for each person and change over time. The research design follows many of the same steps as quantitative research, but differs in that the researcher primarily analyzes words rather than numbers. Table (5) outlines and briefly describes the methods of qualitative research.
Protection of the Rights of Human Subjects

Nurses play an important role:
1. In ensuring that patient interests are not sacrificed to research interests.
2. Nursing priorities include determining that the studies have met appropriate scientific and ethical criteria before their implementation.
3. Protecting patient rights.

Specific patient rights include:
1. Informed consent, the patient’s right to consent knowledgeably to participate in a study without coercion.
2. The right to refuse to participate without jeopardizing the care.
3. The right to confidentiality.
4. The right to be protected from harm.

Application of Research to Practice

The most common impediments to nursing research include:
1. Restricted access to resources.
2. Limited time to participate in research-related activities.
3. Lack of educational preparation needed by nurses for research.
Unless the research findings of nurse researchers are used by practicing nurses to improve the quality of patient care, clinical nursing research is useless.

References: