PART I

Introduction to Nursing Research
CHAPTER 1

Development of Nursing Research

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OBJECTIVES
On completion of this chapter, you will be prepared to:
1. Define nursing research
2. Identify sources of nursing knowledge
3. Describe scientific research
4. Compare two broad purposes for conducting research
5. Discuss four goals for conducting nursing research
6. Compare qualitative and quantitative research
7. Recognize the importance of outcomes research
8. Contrast the various roles of nurses in research
9. Recall some of the historic events in the development of nursing research
10. Determine priority areas for nursing research
11. Explain the significance of the National Institute of Nursing Research
Most people are unaware that nurses conduct research. This statement has appeared in each of the previous editions of this textbook. I had planned to omit it this edition, thinking that surely people are now aware that nurses conduct research. An editorial in Applied Nursing Research (AJN) in November 2004 changed my mind. Joyce Fitzpatrick wrote that “the person in the street” has little understanding as to “what nursing research is or its benefits to the health and welfare of all citizens” (Fitzpatrick, 2004, p. 223). She had recently had the experience of trying to explain what nurse researchers do. Fitzpatrick wrote that many people consider nursing to be a subset of medicine. She called for nurse researchers to go public with the results of their research by contacting representatives of the local and national media, especially health care reporters.

Maureen Kennedy, writing in a guest editorial in the December 2004 issue of AJN, asked why people, including many RNs, do not think of nurses as scientists who conduct important clinical research. She reported on a conference that she had attended—the Third National Congress on the State of the Science in Nursing Research, which was held in October 2004. She was impressed that most of the 300 papers focused on clinical issues of importance to nurses. She wrote that researchers at the conference were reminded to publish not only in research journals but also journals read by practicing nurses. Kennedy expressed the hope that the word is finally getting out about nurse scientists who conduct their own research. Ulrich (2005) asserted that nurses need to get better at “tooting our own horns” about what we can and do contribute to society.

It appears that we are making some advances. In recent years, the National Aeronautics and Space Administration (NASA) has begun to appreciate the value of nursing research. In previous years, most of NASA’s health care research has been physician driven. According to Linda Plush, a NASA consultant, the administrators at NASA have started to realize that nurses often have more expertise than physicians do when it comes to areas such as wound care, medication delivery, and managing chronic conditions (Domrose, 2005).

Florence Downs, in an editorial written in 1996, stated that it has been a number of years since anyone has debated the need for research content in undergraduate curriculums. It is a given. However, she mentioned that she has received complaints from instructors stating that articles in Nursing Research contain “too many statistics and too many variables” and that most articles are too difficult for students to evaluate. Downs wrote that the days are over when we examined one variable at a time. She stated that research investigations and the reports of them have, indeed, become more complicated. However, she contended that nurses need to be able to understand research findings and the effects of these findings on practice. Downs further...
contended that this goal cannot be accomplished in a single research course. So be prepared! Research will remain an important part of your nursing career.

IMPORTANT OF NURSING RESEARCH

I’m sure you are trying to convince yourself that nursing research is important (or you wouldn’t be reading this textbook!). You may be trying to meet the educational requirements for a baccalaureate degree or, as an RN, someone has convinced you that you need more knowledge about research.

In the research classes that I teach, I try to do a hard sell on the first day of class. Sometimes the folded arms and facial expressions of students indicate that they are not convinced of the importance of learning about research. I try to help them understand that research knowledge will help them to be excellent nurses. They are challenged to question constantly every intervention they perform or see performed. Questions to ask include these: Am I performing this intervention because someone told me to or maybe even because this is the intervention that has always been used? What evidence exists that this is the most effective intervention for the problem? If an intervention is not based on research evidence, there is no way to determine that this intervention is the optimum one. I hope that your instructor or your nurse friends will not have to do a hard sell to convince you that research is of utmost importance to the nursing profession. I promise you that your efforts to learn about nursing research will be rewarded in your nursing career in the future.

DEFINITIONS OF NURSING RESEARCH

There is some discrepancy among authors about the definition of nursing research. Polit and Beck (2004) have broadly defined nursing research as “systematic inquiry designed to develop knowledge about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics” (p. 3). Burns and Grove (2005) have more narrowly defined nursing research as “a scientific process that validates and refines existing knowledge and generates new knowledge that directly and indirectly influences clinical nursing practice” (p. 744). Thus, by their definition, to be called nursing research, study results must directly or indirectly affect clinical nursing practice.

In this book, the term nursing research is defined as the systematic, objective process of analyzing phenomena of importance to nursing. Using this definition, nursing research includes all studies concerning nursing practice, nursing education, and nursing administration. Also, studies concerning nurses themselves are included in the broad category of nursing research. The term clinical nursing research is used here to indicate nursing research involving clients or studies that have the potential for affecting the care of clients, such as studies with animals or with so-called normal subjects. Dr. Patricia Grady, director of the National Institute of Nursing Research, has stated that nursing research in clinical practice examines “patient symptom management and involves behavior intervention. It also has a very large focus on prevention and health promotion as opposed to the medical model, which is the treatment/testing research model” (Williams, 2005, p. 10).

To learn about nursing research and how to conduct research, it is important to gain an understanding of what scientific research is all about and why this method of
gaining knowledge is valuable to nurses. The scientific method is only one source of nursing knowledge. It is, however, generally considered to be the most reliable source of knowledge.

**SOURCES OF NURSING KNOWLEDGE**

Nurses have relied on several sources of knowledge to guide nursing practice. A great storehouse of knowledge for nurses has been tradition. Tradition involves the handing down of knowledge from one generation to another and leads to actions that occur because “we’ve always done it that way.”

Another source of knowledge for nurses has been found in authority. Experts or authorities in a given field often provide knowledge for other people. In the past, nurses looked to physicians for a great deal of their practice knowledge. It has only been in recent years that nurses have begun to build a unique body of nursing knowledge.

Nurses have also used trial and error as a means of discovering knowledge. If one approach did not work, another one was used. Finally, when a certain approach was found to be effective, the trial-and-error process ceased. Frequently, the reasons behind the failure or success of a certain method were not determined. The goal was “If it works, we’ll use it.”

Nursing knowledge has been obtained from many sources, but the most objective and reliable source of nursing knowledge is scientific research. Our other sources have not been the most reliable sources of nursing knowledge.

**SCIENTIFIC RESEARCH**

Traditional scientific research is characterized by several features. The researcher uses systematic, orderly, and objective methods of seeking information. The scientific method uses **empirical data**, which are data gathered through the sense organs. Information is gained in the form of data or facts that are obtained in an unbiased manner from some aspect of the real world. The researcher tries to exercise as much control as possible over the research situation, to minimize biased results. Various means of exercising such control are discussed throughout this book. The researcher’s opinions and personal biases should not influence the findings of a study.

There are many similarities between scientific research and the problem-solving approach that is familiar to all nurses. Both processes involve identifying a problem area, establishing a plan, collecting data, and evaluating the data. The purposes of these two activities are, however, quite different. Problem solving attempts to seek a solution to a problem that exists for a person or persons in a given setting. The purpose of scientific research is much broader. It seeks to obtain knowledge that can be generalized to other people and to other settings. For example, the nursing staff might be concerned about the best approach to teaching Mrs. Smith, a blind patient, how to operate an insulin pump. This would be an example of an immediate problem that needs a solution. Scientific research, in contrast, would be concerned with the best approach to use in teaching blind people, in general, how to operate insulin pumps. Scientific research is concerned with the ability to generalize research results.
CHAPTER 1 Development of Nursing Research

PURPOSES OF NURSING RESEARCH

Research may be classified, according to the general purpose of the study, as basic and applied research. Basic research is concerned with generating new knowledge; applied research is concerned with using knowledge to solve immediate problems. Basic research is also referred to as pure research.

Basic research is conducted to develop, test, and refine theories and generate new knowledge. Basic research is also referred to as pure research. Basic research is concerned with generating new knowledge (Kerlinger, 1986; Oman, Krugman, & Fink, 2003; Polit & Beck, 2004). Sometimes it is said that basic research seeks “knowledge for knowledge’s sake.” Whether basic research seeks to generate or develop theories, immediate application of the results usually does not occur. In fact, years may pass before the social usefulness of the results of the research is determined or acknowledged. Basic research often uses laboratory animals as subjects. The following example of a basic research study was conducted with peripheral catheters. The object was to determine a way to keep these catheters from becoming occluded.

**Basic Research**

Nurses must intervene when peripherally inserted central catheters (PICCs) become occluded. Fetzer and Manning (2004) maintained that pharmacological interventions are costly and involve risks. They explored the use of a mechanical percussive technique. A 5- to 10-mL syringe was filled with 1 mL of normal saline and then attached to the hub of the occluded catheter. The plunger was pulled back and released at 2-second intervals until patency was restored. When the plunger was released, a “pop” sound was heard, thus, the technique was named POP. Thirty PICC catheters were clotted with human blood and incubated for 8 hours in a 35˚F saline bath. Using the POP technique, patency was restored in 86% of the occluded catheters.

Applied research is directed toward generating knowledge that can be used in the near future. It is often conducted to seek solutions to existing problems (Burns & Grove, 2005; Kerlinger, 1986; Polit & Beck, 2004). It appears that the majority of nursing studies have been examples of applied research. Many of these studies have focused on nursing interventions for patients and their families. Most of the studies cited in this text are examples of applied research.

The distinction between basic and applied research is really not as clear cut as it may seem. Sometimes the findings of basic research are applied rather quickly in the clinical setting, whereas the findings of applied research actually lead to basic studies. Many studies contain elements of both basic and applied research because theory is being tested that will have immediate implications for nursing. The distinction between basic and applied research may have more to do with financial support for the project than with the purpose of the study. In this sense, basic research may imply that the researcher is provided support to work on a particular project without having to indicate the immediate practical usefulness of the findings.

Although nursing research is generally of the applied type, which is more likely to receive funding than basic research, nurses must search for funding. The federal
The government has the most money available for research (Colling, 2004). Nurses receive the largest amount of government funding through the National Institute for Nursing Research. The budget for this institute was over $138 million for 2005 (Grady, 2005). Other sources for nursing research include private foundations, corporations, and professional organizations, such as Sigma Theta Tau International, Honor Society of Nursing. This organization, in conjunction with its chapters and grant partners (corporations, associations, and foundations), provides more than $650,000 annually for nursing research through grants, scholarships, and monetary awards (Sigma Theta Tau International, Honor Society of Nursing, 2005).

GOALS FOR CONDUCTING NURSING RESEARCH

The importance of nursing research cannot be stressed enough. Some of the goals for conducting research are to (a) promote evidence-based nursing practice, (b) ensure credibility of the nursing profession, (c) provide accountability for nursing practice, and (d) document the cost effectiveness of nursing care.

Promote Evidence-Based Nursing Practice

The major reason for conducting nursing research is to foster optimum care for clients. In the first three editions of this textbook, this section was titled “Improvements in Nursing Care.” However, a decision was made to change the title because evidence-based practice (EBP) is very popular today and is probably a term with which you are all familiar. Because of the increasing emphasis on EBP, this edition of the book contains a chapter on evidence-based practice (see Chapter 18).

Evidence-based nursing practice (EBNP) means that nurses make clinical decisions based on the best research evidence, their clinical expertise, and the health care preferences of their patients/clients. Although EBNP may be based on factors other than research findings, such as patient preferences and the expertise of clinicians, the aim of EBNP is to provide the best possible care based on the best available research. To back up the importance of EBNP, Sigma Theta Tau International, Honor Society of Nursing and Blackwell Publishing initiated a new journal in 2004 titled Worldviews on Evidence-Based Nursing. It is a quarterly peer-reviewed journal.

The nursing profession exists to provide a service to society, and this service should be based on accurate knowledge. Research has been determined to be the most reliable means of obtaining knowledge. As previously mentioned, there are other means of acquiring knowledge, such as through tradition, authority, and trial and error. The scientific method, however, has been determined to be the most objective, systematic way of obtaining knowledge.

Ensure Credibility of the Nursing Profession

In the past, nursing was frequently thought of as a vocation rather than a profession. In fact, the struggle to gain professional status has been long and difficult. One of the criteria for a profession is the existence of a body of knowledge that is distinct from that of other disciplines. Nursing has traditionally borrowed knowledge from the natural and social sciences, and only in recent years have nurses concentrated on establishing a unique body of knowledge that would allow nursing to be clearly identified as a distinct profession. The most valid means of developing this knowledge base is
scientific research. Through research, nurses can determine what it is that they do and how they do it that distinguishes them from other groups in the health care field.

Nurses must demonstrate to the general public that nursing makes a difference in the health status of people. At the time this material is being written (August 2005), Americans have ranked nurses highest in honesty and ethical standards when comparing them to other professionals, except for 2001, when firefighters scored higher following the terrorist attack that fall. Nurses must build on this ranking and admiration by the general public and continue to show what it is that is unique about our services.

**Provide Accountability for Nursing Practice**

As nurses have become more independent in making decisions about the care of clients, their independence has brought about a greater need for accountability. There is an old saying that every privilege is accompanied by a corresponding duty. The privilege of being independent practitioners brings with it the duty of being accountable to those who are recipients of our care. Although nurses have generally been glad to achieve some degree of independence from the medical profession, in some ways life was easier when physicians were considered to be responsible for all aspects of health care. At that time, if a nurse made a medication error, the physician (and sometimes the hospital) was held responsible. The idea of a lawsuit being brought against a nurse was almost unthinkable. The general public has gained more knowledge of health care, and expectations of nurses as providers of care have increased.

To be accountable for their practice, nurses must have a sound rationale for their actions, based on knowledge that is gained through scientific research. Nurses have the responsibility of keeping their knowledge base current, and one of the best sources of current knowledge is the research literature. The ability to critique research articles and determine findings that are appropriate for practice is a skill that is needed by all nurses.

**Document the Cost Effectiveness of Nursing Care**

Because of nursing’s humanistic and altruistic tradition, it has been difficult for nurses to consider the cost effectiveness of nursing care. The goal has been to help people achieve or maintain health, regardless of cost. But the reality of the health care picture has forced nurses to think in monetary terms. Some nurses are acquiring additional education in business and finance to help them better understand the financial aspects of health care. With the increased cost of health care, all disciplines within the health care field have been called on to demonstrate their value in a dollar-and-cents fashion.

Consumers have become more cognizant of the cost of health care and are asking for explanations of services they receive. These consumers need to be made aware of the importance of nursing care in relation to maintaining the health of well clients and in promoting the recovery and rehabilitation of ill clients.

Nursing services can consume a large percentage of a hospital’s budget. With prospective payment systems determining the amount of reimbursements that hospitals receive, nursing care services are being closely examined. It is not difficult to determine that hospitals could cut costs by curtailing nursing services. If nursing care can be demonstrated to be cost effective, hospitals will look to other sources for “cutting the fat.” If effective nursing care can allow clients to leave hospitals in better condition and in less time than predicted, hospitals will make more profit or, in the case of nonprofit
hospitals, lower operating budgets will be necessary. Unfortunately, only a small percentage of a hospital’s budget is allocated for nursing research.

Many studies in the literature demonstrate the cost effectiveness of nursing care. In a classic study, which means it has been cited many times, Brooten et al. (1986) examined early hospital discharge and home follow-up care of very-low-birthweight infants. They found that follow-up care by a nurse specialist is safe and cost effective. This type of care potentially decreases iatrogenic illness and hospital-acquired infections, enhances parent–infant interaction, and significantly reduces hospital costs for care.

Ferguson (1996) discussed the cost effectiveness of a nurse practitioner–managed health care unit (HCU) that was implemented in a meat packing/rendering plant in the northern United States. During the first 5 years (1988–1992) a net savings of over $1.3 million was realized in the cost of workers’ compensation alone.

The cost savings of telephone nursing (TN) was reported by Greenberg (2000). Her study took place in a pediatric outpatient clinic setting in the southwest. Results of 90 calls (25% of the calls for 1 month) were examined. The dollar savings for 1 month was estimated to be $2,360. This figure was determined by subtracting the dollars ($2,216) spent on actual outcomes from the dollars ($4,576) that would have been spent based on outcomes without TN.

The cost effectiveness of providing home nursing visits after newborn discharge was studied by Paul, Phillips, Widome, and Hollenbeak (2004). Nurse visits to newborns were made 1 to 2 days after their hospital discharge to determine if these visits would reduce the incidence of rehospitalization for jaundice and dehydration. These visits were found to reduce rehospitalization within the first 10 days of life from 2.8% of 2,641 newborns who were not seen by a nurse to only 0.6% of the 326 infants who received a home visit by a nurse. The home visits were significantly less costly than were the visits to the emergency department.

Bourdeaux et al. (2005) studied the use of a nurse case management program with patients who were experiencing syncope. The program was implemented at a large urban teaching hospital. There were 359 patients in the experimental (case management) group and 331 patients in the control (no case management) group. Length of stay was reduced by 0.15 days over the 12 months of the case management program for diagnosis-related group (DRG) 141 (syncope and collapse with comorbidities). The decrease in direct cost was $376 per patient. Length of stay was decreased by 0.28 days for DRG 142 (syncope and collapse without comorbidities), with a cost savings of $292 per patient.

The staff of one Pennsylvania hospital created an admission nurse role (Hlipala, Meyer, Wallace, & Zaremba, 2005). This nurse initiates and completes the health history and assessment and promotes consumer satisfaction. A time study revealed 30 to 60 minutes less staff nurse time was needed for new admissions. The cost savings for a year, based on the salary of staff nurses, was between $100,000 and $201,296. Also, $64,000 a year was saved in overtime pay. The overtime related to admissions was found to be 93% less than prior to implementation of the admission nurse role.

QUANTITATIVE AND QUALITATIVE RESEARCH

Nurse researchers conduct both quantitative and qualitative studies. Quantitative research is concerned with objectivity, tight controls over the research situation, and
the ability to generalize findings. **Qualitative research** is concerned with the subjective meaning of an experience to an individual.

In the past, nurse researchers have primarily conducted quantitative research. Quantitative research has been the traditional scientific approach used by many of the other disciplines. Some people do not consider qualitative research to be scientific. Others view quantitative research as hard science and qualitative research as soft science. Still others view both research approaches as scientific.

The number of researchers who are conducting qualitative research has increased. In 1985 Madeleine Leininger wrote that there were approximately 50 qualitative nurse researchers. Although the exact number of nurses conducting qualitative research today is not known, the numbers have increased dramatically.

Consider patients who are experiencing chronic pain. Quantitative research would be concerned with the level of pain that these people were experiencing, and qualitative research would be concerned with what it means to be living with chronic pain. This book focuses more on quantitative research than on qualitative research. However, Chapter 4 presents an overview of qualitative research, and specific qualitative designs are covered in Chapter 10.

**OUTCOMES RESEARCH**

Just as evidence-based practice has become a popular term, **outcomes research** is a new buzzword that you will hear frequently. I like to think that nursing research has always been interested in outcomes; we just didn’t give it that label. Lake (2006) wrote that although most clinical nursing research studies could be considered outcomes research, the term has come to be associated with “how the organization of nursing impacts nursing (e.g., burnout), system (e.g., retention), and patient (e.g., 30-day mortality) outcomes rather than on the efficacy of an individual nursing intervention” (p. 51).

In this textbook, **outcomes research** is considered the research that focuses on measurable outcomes of interventions with certain patient populations. The increased interest in this type of studies is tied in with the high cost of health care. Health care policymakers, such as managed care organizations, want to know if the care that is being provided is cost effective. Consumers also want to know if the services that they purchase will improve their health. Therefore, outcomes become very important.

Outcomes research has been placed in a separate category because the types of designs, methods, and sampling procedures used in these studies may be somewhat different from those used in the traditional quantitative or qualitative studies. For example, rather than exercising tight control over the sample, the goal might be deliberately to include a wide range of patients with varying levels of health status and comorbidities to determine how effective an intervention or treatment might be for this varied group of people. As outcomes research continues to emerge, you will want to seek further information in the latest clinical and research journals.

**ROLES OF NURSES IN RESEARCH**

The roles of nurses in research according to level of educational preparation were identified by the American Nurses Association Council of Nurse Researchers in 1981.
The guidelines were revised in 1993 and 1994. These guidelines, in the form of a position statement, may be found at http://www.nursingworld.org/readroom/position/research. Expectations are presented for nurses prepared at the following educational levels: associate degree in nursing, baccalaureate degree in nursing, master’s degree in nursing, doctoral education, and postdoctoral education. Nurses prepared at the baccalaureate level should be able to read research critically and determine if research results are ready for use in clinical practice. They should be able to identify clinical problems that need to be investigated. Baccalaureate-prepared nurses should also assist experienced investigators to gain access to clinical sites. They should help select appropriate data collection methods and collect data. Finally, they should implement research findings in their practice.

The American Association of College of Nursing (AACN) published a position statement on nursing research in 1999. This statement lists research expectations and outcomes for graduates of baccalaureate, master’s, doctoral, and postdoctoral programs. These expectations are similar to those of the American Nurses Association. This position statement may be found at http://www.aacn.nche.edu/Publications/positions/rscposst.htm.

The latest revision of the American Nurses Association guidelines and the AACN guidelines include expectations of those with postdoctoral preparation. Postdoctoral study involves agreements between novice researchers, usually with recent doctorates, and established investigators. These seasoned investigators agree to mentor the novices for a period of 2 or 3 years. Private and federal funding is available for postdoctoral preparation.

Overall, there are many roles that nurses can assume in association with research projects. Some of these include the following:

1. Principal investigator
2. Member of a research team
3. Identifier of researchable problems
4. Evaluator of research findings
5. User of research findings
6. Patient/client advocate during studies
7. Subject/participant in studies

**Principal Investigator**

Nurses can and should serve as principal investigators in scientific investigations. To be a principal investigator, special research preparation is necessary. It might be possible for a beginning researcher to conduct a small-scale survey study, but preparation beyond the baccalaureate level is necessary for independent investigator status in most nursing research studies.

**Member of a Research Team**

Nurses can serve as members of a research team. They may act as data collectors or administer the experimental intervention of the study. As nurses increasingly participate in research, it is possible that interest and enthusiasm to conduct their own investigations may grow. In 1982 Rittenmeyer wrote that research would become a
higher priority as knowledge of the benefits of research increases. She predicted that by 1990 research would be part of the nurse’s normal workload. Unfortunately, the 20th century closed without her prediction coming true. Maybe the 21st century will be the magic millennium!

Myers and Kosinski (2005) have proposed that nursing research is slowly gathering momentum because bedside nurses and health care leaders are trying to validate the impact of nursing on patient outcomes and the health care system in general. We can only hope that the trend continues as evidence-based practice becomes the standard for nursing care.

**Identifier of Researchable Problems**

All nurses, from associate degree to doctoral-level preparation, have the responsibility of trying to identify areas of needed research. Nurses at the bedside are particularly well situated to identify patient-related researchable problems.

**Evaluator of Research Findings**

Every nurse should be involved in the evaluation of research findings. As research consumers, nurses have the obligation to become familiar with research findings and determine the usefulness of these findings in the practice area. Beginning researchers should critique research articles, first with the help of an experienced researcher and eventually on their own, through the use of knowledge gained in a structured research course (either in their basic nursing education program or in a continuing education course). The evaluation of research is not an easy task. This book will help you to acquire some of the skills needed to critique research articles and reports.

As evidence of the expectation that all nurses know how to evaluate research articles, *AJN* published an article in December 1996 on critiquing research (Rankin & Esteves, 1996). The reader could apply for continuing education hours by completing and returning the accompanying questionnaire. The article began by stating that many nurses do not feel confident that they can evaluate research articles. However, the authors cautioned against relying on the mass media to tell us what is important. Media discussions of research frequently lack the objectivity needed by nurses to determine if findings are appropriate for use in nursing practice. Critique guidelines are presented at the end of Chapters 2 through 16 of this book. The final chapter of the book, Chapter 19, focuses entirely on critiquing skills.

**User of Research Findings**

Through the years, nurses have tended to carry out nursing procedures and provide nursing care “the way we’ve always done it.” Change is difficult to bring about, but research findings have no value if they are not put into use. After evaluating research findings, nurses should use relevant findings in their practice. The primary goal of nursing research, as mentioned earlier, is the improved care of clients. However, nurses must be judicious in their use of research findings. The results of one small study conducted with a sample of 15 volunteers would not provide sufficient evidence for a change in nursing practice.

Research utilization and evidence-based nursing practice are related because both processes place emphasis on research findings. However, research utilization
focuses on the implementation of findings from specific research studies. The goal of research utilization is to see that the findings of research studies are actually put into play in nursing practice. EBNP is broader and involves searching for the best evidence to use in nursing practice, which includes searching for the best research evidence available.

**Patient/Client Advocate During Studies**
All nurses have the responsibility to act as patient/client advocates when their patient/clients are involved in research. This advocacy involves making sure that the ethical aspects of research are upheld. Nurses should help answer questions and explain a study to potential participants before the study begins. They also might be available during the study to answer questions or provide support to study participants.

Habel (2005) published an article in the March 15, 2005, edition of *Nurseweek*, “Can You Answer Patients’ Questions About Clinical Trials?” The purpose of the article was to help nurses answer questions about participation in research that might be posed by patients, friends, and neighbors. Some of the questions that research subjects should have answered include Why is the study being done? Who is conducting the study? Who is going to be in the study? What kind of tests and treatments are involved? How long will the study last? What are alternatives to participation? (p. 24). Habel wrote that nurses can serve as valuable resources for information about clinical trials whether they are in the health care setting or in the community.

**Subject/Participant in Studies**
Nurses may act as subjects or participants in research. Many nurses (including me) are involved in a long-term survey study, the Nurses’ Health Study, being conducted by researchers at Harvard Medical School. The study was designed to examine some of the health risks that pose special threats to women. Nurses were chosen as subjects, according to Frank Speizer, the principal investigator, because the study called for “a sophisticated group of individuals who could report exposure and diseases more accurately than the general population” (“Massive Nurses’ Health Study,” 1983, p. 998). The study was begun in 1976 and was originally intended to last for 4 years, but additional funding has been received and the study has continued for approximately 30 years. In 1989 a new cohort of younger nurses was added to the study in what is called Nurses’ Health Study II. Approximately 650 publications (as of summer 2005) have resulted from the data obtained in these studies. Chapter 11 presents more information on the Nurses Health Study I and II, under the discussion of cross-sectional samples.

**HISTORY OF NURSING RESEARCH**
Nursing research was slow to develop in the United States as well as in the rest of the world. Some of this slow growth is related to the development of nursing education. Despite her skill in independent scientific investigation, Florence Nightingale derived the foundation for modern nursing education from the military tradition, which emphasized the concept of authority. The authoritarian system of training was a deterrent to the development of inquiring minds (Simmons & Henderson, 1964).
Schools of nursing throughout the world have been influenced by British nursing education and have continued to rely on tradition and authority, as did British schools.

Nursing research was able to develop and expand only as nurses received advanced educational preparation. The growth of nursing research seems to be directly related to the educational levels of nurses. Although the first university-based nursing program in the United States was begun in 1909, the number of such programs increased very slowly. In the early part of this century, nurse leaders were more concerned with increasing the number of nurses and establishing hospital-affiliated nursing schools than with establishing university programs.

Because nurses were not prepared to conduct research, many of the early nursing studies were conducted by members of other disciplines. Beginning with the 1923 study, whose final results was titled the Goldmark Report, non-nurses became involved in studying nurses and nursing. Sociologists were particularly interested in the “learning, living, and working” experienced by nurses (Abdellah & Levine, 1965, p. 4). Research conducted by sociologists and behavioral scientists added to their respective bodies of knowledge but did not necessarily expand nursing’s body of knowledge (Henderson, 1956).

As nurses received advanced educational preparation and became qualified to conduct research, many of the studies they carried out were in nursing education because most nurses before 1950 received their advanced degrees in education. However, even during the early half of this century, the need for clinical nursing research was evident. In an article in the AJN in 1927, Marvin proposed many research questions involving procedures. What was the safest, simplest, quickest method of preparing a hypodermic? How long should the hands be scrubbed, by what method, and with what kind and strength of soap? By the 1950s, interest in nursing care studies began to rise. During the 1970s, particularly the last 5 years of that decade, practice-related research expanded rapidly.

Although Florence Nightingale recommended clinical nursing research in the mid-1800s, her advice was not followed by most nurses until over 100 years later. Some of the studies that she recommended, such as those concerning environmental health hazards, are being conducted today. It is only in recent years that Nightingale has come to be appreciated for the truly extraordinary woman that she was. If nurses had begun sooner to follow the example of their first leader, nursing would be much further along in establishing a body of nursing knowledge. However, there is reason for optimism at this time. Both the number and the quality of nursing studies have increased dramatically.

There are many noteworthy events in the historical development of nursing research. Here are some of the more important events:

- **1850s**: Florence Nightingale studied nursing care during the Crimean War. She called for research that focused on nursing practice. Nightingale admonished nurses to develop the habit of making and recording observations systematically. She recorded observations in a systematic way and used statistics to clearly illustrate her findings.

- **1902**: Lavinia Dock reported a school nurse “experiment” that was begun by Lillian Wald. Nurses gave free care to school children and visited the homes of sick children.
1906: Adelaide Nutting conducted a survey of the educational status of nursing.

1909: The first university-based nursing program was established at the University of Minnesota.

1923: A well-known study of nursing and nursing education was conducted by the Committee for the Study of Nursing Education and funded by the Rockefeller Foundation. This study is frequently referred to as the Goldmark Report. The study recommended advanced educational preparation for teachers, administrators, and public health nurses and was instrumental in the establishment of early collegiate nursing schools at Yale, Vanderbilt, and Western Reserve.

1924: The first doctoral program for nurses was established in 1924 at Teachers College, Columbia University. The EdD degree was offered to nurses preparing to teach at the college level.

1927: Jean Broadhurst and her colleagues reported a research investigation on handwashing procedures.

Edith S. Bryan became the first nurse to earn a doctoral degree when she received a PhD in psychology and counseling from Johns Hopkins University.

1928: Ethel Johns and Blanche Pfefferkorn published a study concerning the activities in which nurses were involved. This study was one of the first of many studies that focused on nurses.

1932: Elizabeth Ryan and Virginia B. Miller investigated thermometer-disinfecting techniques.

1936: Sigma Theta Tau, National Honor Society for Nursing, began funding nursing research.

1948: Esther Lucille Brown, a social anthropologist, published her famous study on nursing education, *Nursing for the Future*, which called for nursing education to take place in university settings. One of the major recommendations of this study was that hospitals should hire enough permanent staff so that nursing students would not be required to staff these institutions. The Brown Report, as the study was called, recommended research in nursing and pointed to the need for nurse educators to be involved in research.

Doris Schwartz documented the effectiveness of nursing care for inducing sleep in patients and for decreasing their intake of medications.

1949: The Division of Nursing Resources was organized within the U.S. Public Health Service.

Esta H. McNett demonstrated the usefulness of masks in preventing the spread of tuberculosis.

1952: The first issue of *Nursing Research* was published.

1953: The Institute of Research and Service in Nursing Education was founded at Teachers College, Columbia University. This unit had a full-time staff involved in the study of nursing and nursing education.

1955: The American Nurses Foundation was established with the goal of promoting high-level wellness and the improvement of patient care. This foundation provides funds for nursing research.
The Nursing Research Grants and Fellowship Programs were established by the U.S. Public Health Service.

- **1957:** The first unit directed primarily toward research in nursing practice was established at the Department of Nursing of the Walter Reed Army Institute of Research.
  
  The Western Council for Higher Education in Nursing (WCHEN) sponsored a nursing research conference at the University of Colorado.

- **1962:** The federally supported Nurse Scientist Graduate Training Grants Programs were begun.

- **1963:** Lydia Hall published her 5-year study of chronically ill patients who were cared for at the Loeb Center in New York.

- **1970:** The National Commission for the Study of Nursing and Nursing Education, established by the American Nurses Association (ANA) and the National League for Nursing (NLN), published the results of a 3-year study on nursing. The report, titled *An Abstract for Action*, was popularly called the Lysaught Report, after Jerome Lysaught, director of the project. One of the recommendations of the report was that research be financed in both nursing practice and nursing education.
  
  A center for nursing research was established at Wayne State University.

- **1972:** The ANA established a Department of Nursing Research.

- **1974:** At its national convention, the ANA delineated nursing practice as the area to which nursing research should be directed in the next decade.

- **1976:** The Commission on Nursing Research of the ANA recommended that research preparation be included in undergraduate, graduate, and continuing education programs.

- **1977:** The Veterans’ Administration began employing nurse researchers.

- **1978:** The first issue of *Research in Nursing and Health* was published.

- **1979:** The first issue of *Western Journal of Nursing Research* was published.

- **1980:** The Commission on Nursing Research of the ANA set up a list of research priorities for the 1980s.

- **1982:** Eleven volumes were published of the work of the Conduct and Utilization of Research in Nursing (CURN) project.

- **1983:** The first Center for Nursing Research was established. It encompassed the American Nurses Foundation and the American Academy of Nursing.

- **1986:** The National Center for Nursing Research (NCNR) was established within the National Institutes of Health.

- **1987:** Dr. Ada Hinshaw, director of the NCNR, called for nursing organizations to identify their research priorities.

- **1988:** The NCNR convened the first Conference on Research Priorities (CORP #1) to establish research priorities through 1994.

- **1988:** The first issues of *Applied Nursing Research* and *Nursing Science Quarterly* were published.

- **1992:** The first issue of *Clinical Nursing Research* was published.
1993: The National Institute of Nursing Research (NINR) was established within the National Institutes of Health (NIH). This organization replaced the NCNR.

The second Conference on Research Priorities (CORP #2) was held to establish research priorities for 1995–1999.

1994: The first issue of *Qualitative Nursing Research* was published.

1997: The International Council of Nurses convened a group of experts to establish worldwide nursing research priorities.

1999: The first issue of *Biological Research for Nursing* was published.

2001: The budget for NINR reached almost $90 million.

2004: The first issue of *Worldviews on Evidence-Based Nursing* was published.

2005: The budget for NINR was over $138 million.

**RESEARCH PRIORITIES FOR THE FUTURE**

Professional nursing organizations and individual nurse leaders are united in identifying the need for research that will help build a scientific knowledge base for nursing practice. In 1980 the ANA Commission on Nursing Research identified priorities for nursing research. These priorities included research concerned with health promotion and preventive health practices for all age groups, health care needs of high-risk groups, life satisfaction of individuals and families, and the development of cost-effective health care systems.

In 1985 the ANA Cabinet on Nursing Research identified 10 priority areas. These included (a) promote health, well-being, and the ability to care for oneself among all age, social, and cultural groups; (b) minimize or prevent behaviorally and environmentally induced health problems that compromise the quality of life and reduce productivity; and (c) minimize the negative effects of new health technologies on the adaptive abilities of individuals and families experiencing acute or chronic health problems.

In November 1987 Dr. Ada Sue Hinshaw, director of the National Center for Nursing Research (NCNR), invited nursing organizations to identify their research priorities. Since that time, many nursing organizations have conducted surveys of their membership to determine research priorities.

Research priorities for people with Alzheimer’s disease were identified at a research conference held in 1988 (Duffey, Hepburn, Christensen, & Brugge-Wiger, 1989). The top priority was given to research on the management of physical problems (i.e., incontinence of bowel and bladder, falls, sleep disturbance, gait disturbance, maintenance of adequate nutrition). Management of disruptive behaviors (i.e., agitation, wandering) was listed as the second priority.

The National Association of Orthopaedic Nurses identified a list of priorities in 1990 (Salmond, 1994). They used a Delphi technique to survey experts in the field. Some of the highest ratings were given to preventing confusion in elderly patients post-hip fracture, determining the most effective safety measures to use with the patient with acute confusional state, and differentiating pain responses according to diagnoses, ages, and pain management interventions. In 1997 Sedlak et al. (1998)
replicated the 1990 study. Their respondents expressed the need for more research on pain and patient complications, such as deep vein thrombosis (DVT). The authors expressed some concern about this particular priority because of the large amount of published research on DVT. Sedlak et al. called for an ongoing and wider dissemination of research results.

In 1999 Pullen, Tuck, and Wallace published a list of priorities in mental health nursing. These priorities were obtained by examining the published literature from 1990 to 1996. No specific mental health nursing agenda was found. Six broad categories were identified: support, holism, mental health nursing practice, quality care outcomes, mental health etiology, and mental health delivery systems. These authors cautioned that as nursing promotes evidence-based practice, there is a need for clear research priorities. They called for mental health nursing experts and organizations to propose a national/international mental health research agenda.

The Emergency Nursing Association conducted a Delphi study on national research priorities for emergency nurses in the United States (Bayley, MacLean, Desy, & McMahon, 2004). Three rounds of mailed surveys were used to gather data. Responses were received from 101 emergency nursing leaders. The study was completed in summer 2001. Interventions for pain management received the highest ranking. Emergency nurses were also concerned with staff shortages and overcrowding of emergency departments and the effects of these two conditions on patients.

A survey was conducted among members of the Oncology Nursing Society (ONS) to determine research priorities for 2005 to 2008 (Berger et al., 2005). Responses were received from 431 members. The top 20 research priorities were identified. These included quality of life, participation in decision making about treatment in advanced disease, patient/family education, participation in decision making about treatment, and pain management.

Although clinical nursing research is essential for the profession, other types of research are also needed. Grier (1982) decried that patient care research had become the “sacred cow” for nursing research. Brown, Tanner, and Padrick (1984) wrote that research regarding nurse characteristics, nursing education, and nursing administration should not be abandoned because these factors affect the care that nurses provide. Abdellah and Levine (1994) also called for studies other than clinical studies. They wrote that we need reliable tests to predict clinical performance by students and research on occupational choice. Fitzpatrick (1999) contended that nursing education research should receive the same recognition as clinical research. She mentioned the pressure in recent years to transform nursing educational programs to meet changing health care needs and contended that any changes should be based on research. Tucker-Allen (2003) wrote an editorial in which she bemoaned the fact that nursing education research is not always respected. She called for nurse educators to conduct research on both clinical issues and educational issues. She expressed the hope that funding would increase for educational research.

Replication studies should be a high priority for nursing research. **Replication studies** involve repeating a study with all the essential elements of the original study held intact. Different samples and settings may be used. Replication studies in nursing have not been numerous, and the lack of these studies has hindered the development of a cumulative body of nursing knowledge. This type of study is of particular importance in clinical nursing research. Because of the small nonrandom samples
used in many studies, nurses need to conduct many similar studies on the same topic to allow for generalization of findings. Nursing studies have generally been one of a kind. It is rare that the results of a single study provide enough evidence for making decisions about nursing practice.

NATIONAL INSTITUTE OF NURSING RESEARCH

The National Institute of Nursing Research (NINR) was officially established within the National Institutes of Health (NIH) on June 10, 1993. It replaced the National Center for Nursing Research (NCNR), which had been established in 1986. With the creation of the NINR, nursing research received a big boost in respectability. Funding for nursing research has increased a great deal. In 1986 the NCNR had a budget of $16 million. In 1995 the NINR received an appropriation of close to $50 million from Congress. By 2001 funding had been increased to almost $90 million. In 2005 the budget for the NINR was over $138 million.

The mission statement of the NINR (National Institute of Nursing Research, 2005) indicates support for “clinical and basic research to establish a scientific basis for the care of individuals across the life span—from management of patients during illness and recovery to the reduction of risks for disease and disability, the promotion of healthy lifestyles, promoting quality of life in those with chronic illness, and care for individuals at the end of life” (¶ 1). The entire mission statement and strategic plans for the 21st century are found at http://ninr.nih.gov/ninr/research/diversity/mission.html.

The NINR convened two meetings, in 1988 and 1993, titled “Conference on Research Priorities in Nursing Science.” These conferences are known as CORP #1 and CORP #2. The 1988 meeting set priorities for 1989 to 1994. Some of the high priority areas were low birthweight infants, HIV infection, and nursing informatics. The 1993 conference set priorities for 1995 through 1999. These priorities included research on living with chronic illness, interventions to promote immunocompetence, approaches to remediate cognitive impairment, and nursing interventions in HIV/AIDS.

In 2000 the NINR joined with more than 50 societies that represent the behavioral and social sciences to usher in the “Decade of Behavior: 2000–2010.” This broad-based research and public policy initiative focuses on improving health, education, and safety. For more information on the Decade of Behavior, visit http://www.decadeofbehavior.org.

The top five research areas forwarded by the NINR to Congress for 2005 (Grady, 2005) concerned (a) patient safety on hospital units related to RN staffing, (b) the impact of a nurse practitioner–led program for inner-city black men with hypertension, (c) early and acute signs of heart attack in men compared to women, (d) the role of nursing care in transition from hospital to home for elders with heart failure, and (e) outcomes associated with hospice care and advanced directives. Some of the research areas planned for 2006 (Grady, 2005) included preventing and intervening in HIV/AIDS, increasing health promotion studies related to parenting capacity, and additional focus on end-of-life and palliative care, with particular emphasis on people in rural and frontier areas.
SUMMARY

Nursing research is defined as the systematic, objective process of analyzing phenomena of importance to nursing. It includes studies concerning nursing practice, nursing education, nursing administration, and nurses themselves. Clinical nursing research is research that has the potential for affecting the care of clients.

Nursing knowledge has come from tradition, authority, trial and error, and scientific research. Scientific research uses empirical data (data gathered through the senses) and is a systematic, orderly, and objective method of seeking information.

Basic research, also called pure research, is concerned with generating new knowledge; applied research seeks solutions to immediate problems. Most nursing studies have been applied research. Many studies, however, contain elements of both basic and applied research.

The most important goal for conducting nursing research is the promotion of evidence-based nursing practice. Evidence-based nursing practice (EBNP) means that nurses make clinical decisions based on the best research evidence, their clinical expertise, and the health care preferences of their patients/clients. Other goals for conducting nursing research are to ensure credibility of the nursing profession, provide accountability for nursing practice, and document the cost effectiveness of nursing care.

Quantitative research is concerned with objectivity, tight controls over the research situation, and the ability to generalize findings. Qualitative research is concerned with the subjective meaning of an experience to an individual. Outcomes research focuses on measurable outcomes of interventions with certain patient populations.

Nurses act as principal investigators, members of research teams, identifiers of researchable problems, evaluators of research findings, users of research findings, client advocates during studies, and subjects/participants in research. Research utilization focuses on the implementation of findings from specific research studies.

Because nurses were not prepared to conduct research, many of the early nursing studies were conducted by members of other disciplines. Some of these studies, such as the Goldmark Report in 1923 and the Brown Report in 1948, contributed important information about nursing and nursing education. As nurses began to receive advanced degrees, these degrees were generally in the field of education. Many of the studies conducted by the first nurse researchers in this country, therefore, were in the area of nursing education. Although Florence Nightingale recommended clinical nursing research in the mid-1800s, this type of research was scarce until the 1970s. Many nursing organizations have identified clinical nursing research priorities for the future. Also, replication studies are needed in nursing. Replication studies involve repeating a study with all the essential elements of the original study held intact.

The National Institute of Nursing Research (NINR) was established in 1993. Funding by Congress has increased from $16 million in 1986 to the National Center for Nursing Research, the precursor to the NINR, to over $138 million to NINR in 2005.
NURSING RESEARCH ON THE WEB
For additional online resources, research activities, and exercises, go to www.prenhall.com/nieswiadomy. Select Chapter 1 from the drop-down menu.

GET INVOLVED ACTIVITIES
1. Divide into two debate teams. One team will be for the issue “Nearly all nursing research should be clinical research.” The other team will be against the issue.
2. The fifth function or expectation of baccalaureate-prepared nurses that was identified by the ANA is “Shares research findings with colleagues.” Think of five methods of carrying out this expectation, either at school or at work.
3. Express to your peers your greatest fears about critiquing research articles.
4. Share with your colleagues how you will decide if you should use research findings in your practice.
5. Develop a statement to present to a group of hospital administrators that would focus on the need to increase funding for nursing research in their institution.
6. A philanthropist puts a note on the bulletin board at your school or work setting. She wrote that she is willing to fund a $200,000 nursing study in the name of her deceased mother who was cared for by “wonderful nurses.” She is asking for suggestions. What one study would you suggest?

SELF-TEST
Circle the letter before the best answer.
1. The most objective means of obtaining nursing knowledge is through
   A. trial and error.
   B. tradition.
   C. scientific research.
   D. authority.
2. The general public
   A. has little knowledge about nursing research.
   B. is able to distinguish between medical and nursing research.
   C. is not interested in nursing research.
   D. None of the above.
3. Which of the following statements concerning nursing research is true?
   A. The scientific base for nursing practice expanded greatly in the first half of this century.
   B. The majority of nursing studies before 1950 focused on clinical problems.
   C. Many studies have focused on nurses themselves.
   D. The first nursing investigations were conducted in the United States.
4. The major reason for conducting nursing research is to
   A. promote evidence-based care for patients/clients.
   B. promote the growth of the nursing profession.
   C. document the cost effectiveness of nursing care.
   D. ensure accountability for nursing practice.
5. Which of the following is generally true concerning the knowledge base for nursing?
   A. Most of the knowledge that has been used by nurses was developed by nurses.
B. Most of the knowledge that has been used by nurses was developed by members of other disciplines.
C. Nurses have used knowledge developed by nurses and by members of other disciplines in fairly even proportions.

6. Determine which of the following statements distinguishes quantitative research from qualitative research:
A. Hypotheses are more likely to be tested in quantitative research than in qualitative research.
B. Fewer quantitative nursing research studies have been conducted in the past than qualitative nursing research studies.
C. Quantitative research concentrates on subjective data, whereas qualitative research focuses on objective data.
D. None of the above.

7. As nurses first began to receive advanced educational preparation and became qualified to conduct research, many of their studies concerned
A. nursing education.
B. characteristics of nurses.
C. nursing administration.
D. nursing care.

8. The emphasis on clinical nursing research expanded rapidly in the
A. 1940s.
B. 1950s.
C. 1960s.
D. 1970s.
E. 1980s.

9. The first journal devoted primarily to the publication of nursing research was
A. Nursing Research.
B. Research in Nursing and Health.
C. Applied Nursing Research.
D. American Journal of Nursing.

10. Nursing leaders have called for research focusing on which of the following topics?
A. Quality of life
B. Patient safety
C. Living with a chronic illness
D. End-of-life care
E. All of the above

11. Which of the following agencies is most influential, at the present time, in funding nursing research?
A. American Nurses Association
B. National Center for Nursing Research
C. National Institute of Nursing Research
D. Sigma Theta Tau International, Honor Society for Nursing

12. All nurses should be able to
A. identify researchable problems for nursing research studies.
B. recognize the importance of nursing research.
C. act as a patient/client advocate during a research study.
D. all of the above.
REFERENCES


