

Seventh Edition

Foundations of
NURSING
RESEARCH

Rose Marie Nieswiadomy
Catherine Bailey



Pearson

Foundations of Nursing Research

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To Dr. Rose Nieswiadomy

*May this edition of Foundations of Nursing Research become a tribute
to your life's work and may it continue to nurture those who seek
to understand and promote research in nursing.*

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Catherine Bailey is a registered nurse. She graduated from a diploma program in Germantown, Pennsylvania and received her BS, MS, and PhD from Texas Woman's University (TWU) College of Nursing in Denton, Texas. She is an Associate Professor at Texas Woman's University, College of Nursing in Dallas, Texas. Her primary interests are in nursing education, adult healthcare and research in nursing. She has taught undergraduate baccalaureate nursing students in the classroom, the simulation lab, and the clinical setting since 2001. She teaches research to master's level graduate nursing students and she has chaired Professional Projects for Family Nurse Practitioner students. She also works with doctoral students who are seeking the degree of Doctor of Nursing Practice. She has published textbook chapters on the use of high-fidelity simulations for nursing students and case scenarios that are appropriate for simulation experiences. She has presented the findings from her studies in podium and poster presentations at METI HPSN Conferences and Sigma Theta Tau International Conferences as well as other regional and local venues.

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Thank You

Our heartfelt thanks go out to our colleagues from schools of nursing across the country who have generously given their time to help us create this exciting new edition of our book. We have reaped the benefit of your collective experience as nurses and teachers, and have made many improvements due to your efforts. Among those who gave us their encouragement and comments are:

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Preface

Our main purpose in writing the seventh edition of this book is to promote an interest in nursing research. Like Dr. Rose Nieswiadomy, we firmly believe that research is essential to an evidence-based nursing practice and the growth of the nursing profession. The results of nursing research studies improve patient care and demonstrate that nurses are not only caring but also cost-effective providers of healthcare.

Research can be interesting and exciting. We have tried to present the material in this textbook in an inspirational manner that memorializes the voice of our original author, Rose. Nursing students and practicing nurses have reported that they have actually read the past editions of this book, which is not the case for most of their textbooks or other books that they read.

After reading this introductory research book, you will not be expected to have the skills to conduct research independently or to critique research reports with a great deal of confidence. However, our goals will have been achieved if you:

- recognize the importance of research to evidence-based nursing practice.
- are willing to use research findings in your practice.
- have gained knowledge about the research process.
- possess beginning skills necessary to evaluate research findings.
- discuss research study results with your colleagues, family, and friends.
- begin to think about conducting your own research study in the future.

For those of you just beginning your careers in nursing, the future of the profession depends on you. This book is intended primarily for individuals with little research experience, particularly undergraduate nursing students. However, many students in graduate programs have used this text to supplement their other research textbooks in order to gain a better understanding of nursing research. They have commented that this text explains the research simply and clearly. It is our hope that practicing nurses will also use this book as they evaluate study findings for use in practice, and as they begin to conduct their own studies.

Features of the Book

The informal writing style has been maintained in this seventh edition of the text. Readers have made many positive comments about the writing style. Students have said that they often feel as if they are talking with the author. The book continues to be learner-friendly, just like the previous six editions. Please interact with us as you read this text. Get involved! This is the best way to learn about research.

Readers are referred to websites throughout the book for additional information and resources. References from recent nursing research studies are interspersed throughout this book. These research study excerpts are presented to illustrate various aspects of the research process. Most of these studies were conducted in the United States. A number were conducted in other countries.

New terms are highlighted and defined the first time they are discussed. Each chapter in the book concludes with a summary of the content presented in that chapter. While Chapter 2 provides an overview

of evidence-based practices (EBPs), the newly organized Chapter 3 introduces the reader to ways in which EBPs can be promoted. Chapter 4 and the ends of Chapters 6 through 17 with the exception of Chapter 11, provide ideas for critiquing the specific parts of the research process found in a research report. Chapter 19 provides numerous examples of nursing research studies with a focus on healthcare economics. This chapter was added because nurses should be aware of the monetary issues involved in healthcare and demonstrate that they are not only caring but cost-effective providers of healthcare. Chapter 20 presents guidelines for critiquing both quantitative and qualitative study reports.

Appendix B presents a critiquing exercise. To become engaged in this strategy, you are asked to obtain a copy of a specific research article then critique this article, using the questions listed.

The Self-Tests at the end of each chapter provide readers an opportunity to see how well they have mastered the chapter content. Answers to all of the questions with their rationales are provided at the back of the book.

For each chapter, resources include:

- Chapter Objectives
- Key Terms
- Chapter Review
- Review Questions
- Research Links
- Critical Thinking Exercises/Challenges

The knowledge you gain from reading this book will help you to provide evidence-based care for your patients/clients. We also hope you will gain a greater appreciation of research and can actually picture yourself conducting a research study in the future.

Acknowledgments

When I agreed to assist Dr. Rose with the work of this seventh edition, I never dreamed that she would be called to her heavenly reward prior to its completion. The value of this book, first published in 1985, is evident by its continued use in the United States and other countries throughout the world with translations into several other languages. Thus, it seemed appropriate that I should commit to continue the legacy of her life's work.

Instructors usually make the decision about textbooks for their courses. I and my co-authors are so grateful to the instructors who have chosen this textbook or recommended it as a reference source for their students.

We cannot give enough praise to all of the students who have given this textbook great reviews. We continue to receive comments about how learner-friendly the book is and how it is one of the few textbooks that they have read from cover to cover. Of course, it helps that this textbook is much smaller than some of their other textbooks!

Master's and doctoral level nursing students have remarked they use this book to supplement their course research textbooks. They believe this text presents the research process clearly and succinctly. When they review content in this book, they achieve a greater recall and understanding of research concepts.

Heartfelt thanks go to practicing nurses who have had the courage to pick up this research textbook. It demonstrates their awareness of the importance of nursing research, particularly in this day of evidence-based nursing practice.

Once again, Connie Maxwell, now employed by the Dallas Public Library, has contributed to the revision of the chapter dedicated to the review of the literature. This chapter is always a challenge because of the continued changes in the ways we access information. As was true with Dr. Rose, I am especially grateful for the services provided by Texas Woman's University librarians, especially Eula Oliphant and Elaine Cox, who never failed to find whatever articles were necessary for the work of this book.

Many people at Pearson Education deserve my gratitude, especially Barbara Price, Development Editor, who provided advice as the various chapters of this edition evolved. I appreciate her patience as she kept me on task with the many details of coordinating my responsibilities with the publishing team and the other contributors for this book. She was always available to answer questions, set up phone conferences, and coordinate the copyeditors' workflow, as I reviewed everyone's work.

Although the task of perpetuating Dr. Rose's work at times seemed daunting, I never felt alone. Instead, I was surrounded by Dr. Rose, through so much support from her family, and many colleagues and friends. Dr. Rose's daughter, Anne, frequently offered to help, and her son, Michael, and his colleague, Charles McConnel, contributed to the information on nursing research as it relates to healthcare economics in Chapter 19. A special word of appreciation is directed to Dr. Rose's colleagues and special friends from Texas Woman's University, College of Nursing (Drs. Mancuso, Marsh, Spencer, Stankus, Scott Tilley, and Zeigler), who eagerly volunteered to contribute to this work in honor of her memory. I am grateful to Stephanie Huckaby, who shared her experiences of implementing an EBP in her hospital as we co-authored Chapter 3. Finally, I wish to thank Renae Dougal, Dawna Martich, and Sharon Souter, who also worked to complement this work.

Lastly, but not least, I wish to recognize my family, who patiently overlooked my piles of printed pages that eventually filled every room of our home. I am grateful to my parents, who prepared me to be the person that I am, and my husband, Barney, and my children, who continued to encourage me as I worked through the many processes of writing this edition.

Catherine Ann Bailey, PhD, RN, CNE

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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. Identify the importance of research to nursing
2. Describe four goals for conducting nursing research
3. Compare qualitative and quantitative research
4. Describe the various roles of nurses in research
5. Summarize the development of nursing research and future priorities

Importance of Research to Nursing

Many people are still unaware that nurses conduct research. A similar statement has been included in each of the previous editions of this book. What kind of response do you think you would receive if you were to ask 10 friends to describe nursing research? Their answers would probably be quite interesting. My guess is that you would hear about some aspect of medical research, such as which drug might be most effective for some specific health problem. As nurses, we must seek more opportunities to discuss our research and make our research results readily available to the general public.

In 2006 the American Association of Colleges of Nursing recommended that educational guidelines for baccalaureate nurses should assure high quality and safe patient care. The application of research and evidence-based knowledge from nursing and the sciences were identified as the basis for practice. Polit and Beck (2012) reported that the translation of research into practice is full of challenges, but changes in our healthcare system are supporting this effort. Nurses now have an opportunity to show that they make a difference in the lives of the American people. However, in other countries, nurses are also emphasizing the importance of nursing research.

In a conversation about nursing research in the February 2010 issue of *Canadian Nurse*, Smadu, Murphy, and Petrucka remarked that nursing research must become more visible. They stated that researchers have a responsibility to familiarize those in practice with research and ensure that it is meaningful in content and process. Ultimately, nurses must take the lead to communicate their results and encourage the use of research findings in the practice setting.

Right now, you are probably attempting to convince yourself that nursing research is important (or you wouldn't be reading this textbook). You may be trying to meet educational requirements for a baccalaureate degree, or someone has convinced you that you need more knowledge about research.

Sometimes a hard sell is necessary on the first day of an undergraduate nursing research class. The folded arms and facial expressions of students suggest that they are not convinced of the importance of learning about research.

Research knowledge will help you become an excellent nurse. As you read this book, you will be challenged to question every intervention you perform or see performed. Questions to ask include: 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 the intervention is the optimum one. It is hoped that your instructor or your nurse colleagues, if you are already a nurse, will not have to do a hard sell to convince you that research is of utmost importance to the nursing profession. 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 (2012) have broadly defined nursing research as “systematic inquiry designed to develop trustworthy evidence about issues of importance to the nursing profession, including nursing practice, education, administration, and informatics” (p. 3). Grove, Burns, and Gray (2013) 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 the delivery of evidence-based nursing practice” (p. 2). Thus, by their narrow 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. Studies concerning nurses themselves are also included in the broad category of nursing research. The term **clinical nursing research** indicates nursing research that involves clients or studies that have the potential to affect the care of clients, such as studies with patients or with so-called normal participants. 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 fairly recently 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. 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.”

Scientific Research

Several features characterize traditional scientific research. The researcher uses systematic, orderly, and objective methods of seeking information. The scientific method is based on **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.

Many similarities exist between scientific research and the problem-solving approach familiar to most nurses. Both processes involve identifying a problem area, establishing a plan, collecting data, and evaluating the data. These two activities, however, have very different purposes. 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. Scientific research 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 use in 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.

Purposes of Nursing Research

Research may be classified as basic or applied according to the general purpose of each study. **Basic research** is concerned with generating new knowledge; **applied research** is concerned with using knowledge to solve immediate problems.

Basic research is conducted to develop, test, and refine theories and generate new knowledge (Kerlinger, 1986; Oman, Krugman, & Fink, 2003; Polit & Beck, 2012). Sometimes it is said that basic research seeks knowledge for knowledge’s sake. Whether basic research seeks to generate or develop theories, an 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 the use of syringe pumps that are used to deliver medications through intravenous lines. One of the objectives of the study was to assess the effect of different syringe pump settings on the flushed amount.

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 (Grove, Burns, & Gray, 2013; Polit & Beck, 2012). We have found that the majority of nursing studies have been examples of applied research that focus on addressing issues in nursing practice.

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 applied research findings actually lead to basic studies. 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

Basic Research

Kawakami et al. (2013) conducted a study concerning the effects of flow rate, occlusion alarm settings, syringe sizes, and syringe pump models on bolus amounts. In the presence of different alarm settings, the researchers used either 10 ml or 50 ml plastic syringes that were connected to a 100 cm extension tube then collected the bolus with a syringe at the end of the extension tube. The infusion was started at flow rates of 3 ml or 10 ml per hour and a stopcock was used to release the bolus of fluid from the extension tubing when the occlusion alarm sounded. After releasing the occlusion (with the stopcock) the amount of flushed fluid was higher

with high occlusion alarm settings compared with low alarm settings. When a 50 ml syringe was used, the bolus was significantly larger than when a 10 ml syringe was used. The researchers concluded that the use of a smaller-sized syringe, a lower alarm setting, and the use of pumps with protective functions against accidental bolus reductions are associated with decreased inadvertent bolus amounts if the occlusion is inappropriately released. These findings are especially important for nurses caring for patients who must depend on accurately titrated doses of vasoactive drugs for blood pressure control in intensive care units.

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.

Funding of Nursing Research

The federal government provides the most money for research in this country. Nurses receive the largest amount of government funding through the National Institute for Nursing Research (NINR). The budget enacted in 2015 for this institute was \$140.9 million; and the proposed 2016 budget was more than \$144.5 million. More information on this topic can be found on the NINR website.

Other sources of funding 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 \$200,000 annually for nursing research through grants, scholarships, and monetary awards. This information is located on the Sigma Theta Tau International website. The American Nurses Foundation (ANF) awarded more than \$185,000 in research grants for the 2013 cycle. This information is located on the ANF website.

Goals for Conducting Nursing Research

The importance of nursing research cannot be emphasized enough. Some of the goals for conducting research are (a) to promote evidence-based nursing practice, (b) to ensure the credibility of the nursing profession, (c) to provide accountability for nursing practice, and (d) to 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. **Evidence-based nursing practice (EBNP)** means that nurses make clinical decisions based on the best research evidence, their clinical expertise, and the healthcare 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 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.

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 recently have nurses concentrated on establishing a unique body of knowledge that would allow nursing to be clearly identified as a distinct profession. Through research, nurses can demonstrate what they do that distinguishes them from other groups in the healthcare field.

Nurses must demonstrate to the general public that nursing makes a difference in the health status of people. In 1999, for the first time, the nursing profession was included in the Gallup Poll that ranked professionals in regard to honesty and ethical standards. Since then, nurses have ranked highest every year (except for 2001, when firefighters scored higher following the terrorist attack on the World Trade Center towers on September 11). Nurses must build on this ranking and the admiration of the general public and continue to show what is unique about their services.

Provide Accountability for Nursing Practice

As nurses have become more independent in making decisions about the care of clients, this 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 receive 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 healthcare. At that time, if a nurse made an error in providing care, the physician (and sometimes the hospital) was held responsible. The idea of a lawsuit being brought against a nurse was almost unthinkable. In today's culture, the public has higher expectations for nurses to be accountable for more of what they do.

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 traditions, 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 healthcare picture has forced nurses to think in monetary terms. Some nurses have acquired additional educational preparation in business and finance to help them better understand the financial aspects of healthcare. With the increased cost of healthcare, all disciplines within the healthcare field have been called on to demonstrate their value in a dollar-and-cents fashion.

Consumers are now more aware of the cost of healthcare and are asking for explanations of services they receive. These consumers need to be made aware of the importance of nursing care in maintaining the health of well clients and promoting patient outcomes among those who are ill and recovering.

Nursing services can consume a large percentage of a hospital's budget. With prospective payment systems dictating the amount of reimbursements that hospitals receive, nursing care services are being closely examined. If nursing care can be shown to be cost-effective, hospitals will look to other sources for saving money before considering the curtailment of nursing services. If effective nursing care enables patients to leave hospitals in better condition and in less time than predicted, hospitals will make more profit or lower operating budgets will be needed for nonprofit hospitals. To determine that nursing care is effective, research is needed. 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 cited many times, Brooten et al. (1986) examined early hospital discharge and home follow-up care of very-low-birth-weight 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.

As cost savings have become a serious concern in healthcare, nurses need to have an appreciation for the ways in which the economic market forces have an impact on nursing. Nursing research efforts may contribute positively to the financial well-being and healthcare of members of society.

Quantitative and Qualitative Research

Nurse researchers conduct both quantitative and qualitative categories of studies. **Quantitative research** is concerned with objectivity, tight controls over the research situation, and the ability to generalize findings. Quantitative research studies are typically designed to collect numerical data, which are statistically analyzed to study research questions or hypotheses (LoBiondo-Wood & Haber, 2014). For example, the researcher could be looking for relationships or differences among variables or testing for the effectiveness of interventions. **Qualitative research** is concerned with the subjective meaning of experiences to individuals. Qualitative research usually occurs in a natural setting with a small number of research participants who are willing to share their information about a phenomenon in a narrative format (LoBiondo-Wood & Haber, 2014).

In the past, nurse researchers have primarily conducted quantitative research. Quantitative research has been the traditional scientific approach used by many 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 nurse researchers who conduct 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 more than 25 years later is not known, the numbers have increased dramatically.

The difference between quantitative and qualitative research can be illustrated by considering patients who experience chronic pain. Quantitative research would be concerned with the level of pain that these people were experiencing and how to reduce it, whereas 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, the book does provide an overview of qualitative research and specific qualitative designs are described.

Nurses and Research

The membership of the American Association of College of Nursing (AACN) approved a research position statement in October 1998, with revisions approved in 1999 and 2006. This statement lists research expectations and outcomes for graduates of baccalaureate programs, master's programs, practice-focused doctoral programs, research-focused doctoral programs, and postdoctoral programs.

Nurses prepared at the baccalaureate level should be able to understand and apply research findings from nursing and other disciplines in their clinical practice. They should be able to work with others to identify potential research problems and collaborate on research teams.

Masters-prepared nurses should be able to evaluate research findings and develop and implement evidence-based practice guidelines. They should identify practice and systems problems that require research, and collaborate with scientists to initiate research.

Graduates of practice-focused doctoral programs are prepared for the highest level of nursing practice expertise and use advanced leadership knowledge and skills to evaluate and translate research into practice. Thus, they are also prepared to collaborate with scientists on new health policy research opportunities that evolve from the translation and evaluation processes.

Graduates of research-focused doctoral programs are prepared to conduct independent research. They are expected to plan and implement an independent program of research and begin to involve others (students, clinicians, and other researchers) in their research interest area.

Finally, postdoctoral study provides a time for graduates of research-focused doctoral programs to fully develop their research skills. They are able to develop their research program with the help of formal mentoring by senior investigators.

Roles of Nurses in Research

Overall, nurses can assume many roles in association with research projects. Some of these roles include the following, and are described in the ensuing sections:

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

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, or even the master's level, is necessary for independent investigator status in most nursing studies.

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 increased. 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 begin the magic millennium.

Nursing research does seem to be gathering momentum because bedside nurses and healthcare leaders are trying to validate the impact of nursing on patient outcomes and the healthcare system in general.

We can only hope that the trend continues, as evidence-based practice becomes the standard for nursing care.

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.

Nurses 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. They may gain knowledge 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.

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 quality nursing 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, for example, would not provide sufficient evidence for a change in nursing practice.

Research utilization and evidence-based nursing practice (EBNP) are related because both processes emphasize 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 action 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.

All nurses have the responsibility to act as advocates when their patients/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 about 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.

Some of the questions that research participants need to have answered include: Why is the study being conducted? Who is conducting the study? Who is going to be in the study? What kinds of tests and treatments are involved? How long will the study last? (Habel, 2005). Nurses should serve as valuable resources for information about clinical trials, both in healthcare settings and in the community.

Nurses may act as subjects or participants in research. Many nurses 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 participants, according to Frank Speizer, the principal investigator, because the study called for subjects knowledgeable about health issues in order to obtain more accurate reporting on exposure and diseases than the general population could provide (“Massive Nurses’ Health Study,” 1983, p. 998). The study was begun in 1976 and was originally intended to last for 4 years, but with additional funding the study has continued for over 39 years. In 1989 a new cohort of younger nurses was added to the study in what is called Nurses’ Health Study II. Hundreds of publications have resulted from the data obtained in these studies.

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 deterred the development of inquiring minds (Simmons & Henderson, 1964). Many schools of nursing throughout the world have been influenced by British nursing education and have relied 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 the 20th 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, members of other disciplines conducted many of the early nursing studies. Beginning with a 1923 study, 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 conducted were in nursing education because before 1950 most nurses received their advanced degrees in education. However, even during the early half of the 20th century, the need for clinical nursing research was evident. In an article in the *American Journal of Nursing* 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 late 1970s, practice-related research expanded rapidly.

Although Florence Nightingale recommended clinical nursing research in the mid-1800s, most nurses did not follow her advice until more than 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 extraordinary woman that she was. If nurses had begun sooner to follow their first leader’s example, nursing would be much further along in establishing a body of nursing knowledge. However, there is reason for optimism as both the number and quality of nursing studies have increased dramatically.

The historical development of nursing research has many noteworthy events, including:

- 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 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. The results, known as the Goldmark Report, recommended advanced educational preparation for teachers, administrators, and public health nurses, and were instrumental in the establishment of early collegiate nursing schools at Yale, Vanderbilt, and Western Reserve (now Case Western Reserve) universities.