Chapter 1

Connection Between Research and Evidence-Based Practice

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Chapter Objectives

At the conclusion of this chapter, the learner will be able to

1. Identify the need for research to validate evidence-based practice
2. Define evidence-based practice
3. Discuss obstacles to evidence-based research
4. Examine the nurse’s role in evidence-based practice
5. State how evidence-based practice impacts nursing practice

Key Terms

- Evidence-based practice (EBP)
- Obstacle
- PICOT
- Research process
- Research utilization
Introduction

Regardless of the specific healthcare setting a nurse may select for practicing the art and science of nursing care, the overarching principle for the practice is the provision of quality nursing care to all clients without consideration of social, financial, cultural, ethnic heritage, or other individual characteristics. As the nurse initiates contact with the client, the client should be confident that the care provided by that nurse is based on the most current, up-to-date health information available. Having established the currency of the health information to be utilized, the nurse and client must also agree that individualized application of this information is necessary. Thus, the need for evidence-based practice (EBP) is confirmed by our expectations related to nursing care.

The nurse who receives the assignment to care for an elderly woman, a young child, or a critically ill husband must come to the nursing practice arena with more than the latest information. The information must be tested and confirmed. To see how this works, let’s consider the idea of asthma information, although any disease process could be utilized for this purpose.

Within nursing practice, certain health information concerning the management of asthma is accepted. The initial question that should be asked by a nurse would be: Is this disease management information corroborated by research results? The answer to this question is frequently a negative response. The informational basis for each aspect of the nursing care to be provided should be analyzed to determine its source. Does the information come from general usage, or is it based on information that has been established through research endeavors to be accurate? Having determined the basis for the care to be provided, the nurse must then determine the application of the information based on the individuality of the client’s situation. The application of the information for each client situation would depend on the specifics of the client’s needs, the client’s expectations concerning health, and many other aspects requiring modification of the confirmed research application. The foundation of nursing care delivery must be research-tested and research-confirmed knowledge, tempered by an awareness of the unique characteristics of the client and the situation. Although the healthcare field defines “client” and “patient” differently, for purposes of this text these terms are used interchangeably.

Pravikoff, Tanner, and Pierce (2005) describe the process of EBP as including assessing and delineating a problem through verbalization of an identifiable question, pursuing and evaluating the available facts, implementing a practice intervention as a result of the evidence, and evaluating the entire process for effectiveness. Initially, EBP requires
the identification of the practice problem, followed by the utilization of tested research results to improve the care provided for the clients. According to Ciliska, Cullum, and Marks (2001), the three fundamental appraisal questions are identical, whether the clinical question concerns treatment, diagnosis, prognosis, or causation:

1. Are the outcomes of the study compelling?
   - Which outcomes were identified?
   - Will the outcomes aid in the management of the patient’s care?

It was this need to incorporate proven practices into the provision of health care that fostered the expectations and development of EBP in the current healthcare arena. Bucknall (2007) notes that cognitive approaches, intuition, and analysis of information play key roles in how research is acknowledged, evaluated, and incorporated into the clinical decision-making process that impacts patient outcomes. Clinical decisions are frequently not corroborated by unambiguous, persuasive evidence. Nurses are asked to make real-world decisions with limited information in a fast-paced environment. Time is valuable to the nurse at the bedside, so any course of action has to be both practical and rational (Cannon & Boswell, 2010). This responsibility to make knowledgeable, well-supported decisions based on sound facts emphasizes the need to become effective and efficient at evidence-based practice and research utilization.

Providing a Line of Reasoning for EBP and Evidence-Based Research

Health care is a complex system addressing multiple health-related aspects in an attempt to accomplish the anticipated outcome for the client. Throughout the healthcare arena, nursing care is provided to individuals in need of assistance related to their health status. This attention requires nurses to identify a core foundation of information that reflects quality care. Thus, the need for EBP to be developed around a research-centered foundation was envisioned.

Porter-O’Grady (2006) suggested that the management of EBP requires the use of unique clinical applications based on accessible, up-to-date research. In the quest for quality nursing care, the nurse must use both reliable clinical knowledge and high-quality clinical information. This process of establishing a core foundation of knowledge has been called many things over the years, such as best practices, evidence-based practice, and quality of care. No matter what the practice is called, the basis for the care to be provided must be grounded in research. According to Melnyk and Fineout-Overholt (2005), “When healthcare providers know how to find, critically appraise, and use the
best evidence, and when patients are confident that their healthcare providers are using evidence-based care, optimal outcomes are achieved for all” (p. 3). It is this assurance that the care being provided is confirmed from a tested research foundation that inspires patient confidence in nurses’ commitment to quality health care. Nurses should not rely on unsubstantiated treatment plans, but rather must endeavor to critically analyze aspects of the care to be provided to ensure that quality, tested practices are utilized in the provision of nursing care for each individual. Three new developments in health care and nursing have had an impact on the understanding of the importance of EBP and research in nursing in the United States. First, in March 2010, the Patient Protection and Affordable Care Act (PPACA), also known as the Affordable Care Act (ACA), was passed by Congress and signed by President Barack Obama (Mason, Leavitt, & Chaffee, 2012). While the ACA has a primary focus on affordable, accessible care, there is an emphasis to support research effecting safe, quality patient care. Since nurses provide patient-centered care, nurses will increasingly find themselves actively engaged in EBP and research projects.

The second development in 2010 came from the Carnegie Foundation recommendation in the report by Benner, Sutphen, Leonard, and Day (2010) calling for radical transformations of nursing education. Two of their recommendations support the need for nurses to have an education grounded in inquiry and research to provide evidence-based care.

The third development came from the Institute of Medicine (IOM, 2011) and the Robert Wood Johnson Foundation (RWJF) report regarding the future of nursing. This report urged funding for collaborative nursing projects with other healthcare professionals, so that research can involve nurses in developing models of care and solutions to improve health and health care. They identified eight research priorities for nursing practice and nursing education. The priorities for research ranged from delivery models, reimbursement, care trends, nurse residencies and funding for nurses’ training.

These three new recommendations require nurses to examine their knowledge, skills and most importantly, their values about EBP and research.

Make a list of the tasks that are routinely done by nurses during a typical clinical day. Carefully consider what evidence could be used as the foundation for these tasks. Are the skills for the tasks based on research, personal preferences, clinical guidelines, or traditions?
The practicing nurse has to value the idea of the EBP process to facilitate its complete incorporation and implementation. Nurses must understand the value of integrating research results with personal experiences and client values when determining the treatment plan that best addresses a situation’s identified challenges. According to the Oncology Nursing Society (2005), even though a healthcare provider may utilize the optimal evidence available, each encounter with an individual continues to be unique. The treatments and outcomes will change based on the uniqueness of the client’s values, preferences, interests, and/or diagnoses. According to Fonteyn (2005), “A bonus of nurses’ involvement in EBP activities is their improved ability to think critically and their increased understanding of and comfort with research, all of which seems to perpetuate their interest and success in subsequent EBP pursuits” (p. 439). Nurses are taught, encouraged, and expected to think critically. This process of critical thinking corresponds to the use of EBP on clinical units and in primary care settings. Critical thinking embraces the need for health care to be based on a foundation of proven research data and to include the client’s perspective. The use of unconfirmed reports, hearsay, and unfounded information, combined with a lack of client input, does not fit with the provision of sound, quality nursing care at this point in time.

Fineout-Overholt and Melnyk (2005) state that “Ongoing onsite and off-site learning opportunities for all providers to hone EBP skills in asking searchable, answerable questions, finding the best available evidence, efficiently appraising research reports, and determining relevance and applicability of evidence [are] essential to cultivating an evidence-based culture” (p. 28). A key element within the effective provision of EBP is the nurse’s expertise. Each nurse brings serviceable knowledge to the practice arena. During the process of providing nursing care to a group of individuals, nurses build an underpinning of knowledge on which they draw when delivering future care. This underpinning knowledge base intensifies and expands with each client encounter that the nurse has. Thus, the knowledge base is not stagnant, but rather increases throughout an individual’s nursing career.

Jolley (2002) articulated the expectation that practicing nurses should “be able to access, produce, and use different sorts of evidence, including research, to determine best clinical practices” (p. 34). Even if nurses are not actively involved in an actual research project, they must understand the method for accessing published information and assessing it for applicability. Rolston-Blemman (2009) supports this idea by stating that management has “to recognize the hard truth that every system is perfectly designed to achieve exactly the results it gets” (p. 20). We all know that individuals
rise to the level to which we expect them to rise: If we set low expectations, that is all they will meet. If we establish challenging expectations, they will strive to attain them. At times, a knowledge base is unconsciously incorporated, because the nurse seems to manage the nursing care without directly acknowledging the underlying foundation. This process grows as the nurse gains experience and expertise.

Research is a methodical examination that uses regimented techniques to resolve questions or decipher dilemmas. The conclusions resulting from this focused chain of examination provide a base upon which to build a practice of care that is centered on tested solutions. According to Omery and Williams (1999), “Research, as a scientific process, with its inherent ability to explain and predict, enhances a practice discipline’s ability to anticipate and guide interactions” (p. 50). This anticipation and guidance are related to a discipline’s ability to incorporate into practice the sound evidence derived from valid research endeavors. Although EBP goes beyond research results, the foundation for the practice is the grounded knowledge that comes from the research process. This underpinning allows for the safe and effective provision of quality health care. According to Melnyk and Fineout-Overholt (2005), “The gap between the publishing of research evidence and its translation into practice to improve patient care is a cause for concern in healthcare organizations and federal agencies” (p. 4). Moving the use of researched evidence into the actual patient care setting requires that nurses become increasingly familiar and comfortable with the process of critiquing and applying the evidence to the practice arena.

Each of these aspects—thought process, client preferences, research, and nursing expertise—is included in the EBP definition used in this textbook (Figure 1-1). Although all of these aspects are required, the actual situation directs the weighting of the aspects, because each situation is unique. Melnyk (2004) acknowledges that a consistent, hard-and-fast weighting of the different pieces—research, patient values, and clinician’s expertise—included in EBP is not possible, because the decision-making process is contingent on the situation. In this textbook, evidence-based practice (EBP) is defined as a process of using confirmed evidence (research and quality improvement), decision making, and nursing expertise to guide the delivery of holistic patient care by nurses. Holistic nursing care encompasses the clinical expertise of the nurse, patient preferences, cultural aspects, psychosocial facets, and biological components. The research process and scientific data generated serve as the foundation on which the decision-making process for nursing care is based.
According to Davies (2002), “The transfer of research evidence into practice is a complex process and changing provider behavior is a challenge, even when the relative advantages are strong” (p. 558). The nurse is paramount to the success of the EBP process. Each nurse, whether in the acute care, home health, community health, or other healthcare setting, regularly identifies nursing aspects of care.
Those aspects of care may seem to (1) appropriately address the care needs of the client, (2) not fit the current accepted provision of care, or (3) be better addressed via some other method of care. Most nurses have at some point in their practice identified a situation that needs to be reevaluated. Within the day-to-day provision of nursing care, the question arises about why we perform a procedure a certain way when something else seems to work better. It could also be a question of how the care can be better provided to meet the client’s needs and expectations. The healthcare community is also encouraging this line of questioning in an effort to identify the best methods for the provision of care. The expectation behind EBP is that everyone will become involved in the identification, examination, and implementation of research-founded health care that can result in the provision of effective, validated client care. Nurses must accept the responsibility of being active in providing quality care to their clients. To do so effectively, they must base the provision of care on results that support the care being administered in a wide variety of healthcare settings.

Cronenwett (2002) has stated that “Evidence for practice mounts slowly over time, as scientists discover first what works in controlled environments and second what works in daily clinical practice” (p. 3). The application of research results in the everyday provision of nursing care takes both time and energy by each and every nurse to ensure that the quality of care is appropriate. All nurses have the responsibility of ensuring that the care they provide to their clients is based on sound nursing knowledge, not just “the way we have always done it.” Cronenwett (2002) has further identified the need to challenge clinical community partners to become increasingly involved upfront in the recognition of the problem and the development of the intervention, which includes new research opportunities. Practicing nurses must become actively engaged at multiple levels of the different phases of the research endeavor. At each phase, the nurse’s clinical expertise should be readily valued as the process moves forward to establish the evidence for use in the clinical setting.

According to the Agency for Healthcare Research and Quality (AHRQ, 2000), outcomes research is a growing expectation within health care. The provision of quality health practices requires that individuals “seek to understand the end results of particular healthcare practices and interventions” (AHRQ, 2000, para. 1). Outcomes research is viewed as a mechanism for determining which quality care is possible and how to get to that point of quality care for the patient. The linkage of outcomes experienced with the care expected empowers research to cultivate improved channels for monitoring and improving the quality of care provided within the healthcare arena. Translational research is an endeavor that seeks to move the evidence that has been collected by effective research projects into the actual provision of
health care. Nurses at the bedside must become champions for the inclusion of timely, documented, substantiated results into the active provision of health care to benefit clients confronted with the health issues.

Titler, Everett, and Adams (2007) discuss the notion of implementation science as “the investigation of methods, interventions, and variables that influence adoption of evidence-based healthcare practices by individuals and organizations to improve clinical and operational decision making and including testing the effectiveness of interventions to promote and sustain use of evidence-based healthcare practices” (p. S53). It is through the use of concepts such as implementation science that research utilization, evidence-based practice, and research are coming together for the improvement of healthcare delivery. As nurses learn to appreciate the importance of investigating the different routines, interventions, and obstacles within the provision of quality care, innovative and tested systems of healthcare delivery and skills will become increasingly available and accepted. According to Malloch and Porter-O’Grady (2006), “The goal of a research course is to introduce nursing students to the basics of the scientific approach of research in the belief that they will be able to use the information produced to provide guidance to their nursing practice upon graduation” (p. 75). The idea behind clarifying the process of research is to enable practicing nurses to utilize the scientific thought process to validate and augment the nursing care provided to clients. The entire process of critiquing research articles and conducting research projects is designed to strengthen the nursing professional’s critical thinking abilities, thereby allowing for the delivery of the most holistic care possible in the work environment. Malloch and Porter-O’Grady (2006) note that the critical skill required for effective EBP is the ability of nursing professionals to analytically examine research results and evidence to determine the optimal data to use in the provision of holistic health care on a day-to-day basis. Without this foundation, which enables them to methodically examine the evidence, nurses are left to vacillate among varying interpretations of healthcare information. As mentioned earlier, the ACA, IOM/RWJF and Carnegie Foundation reports of 2010 leave no room for nurses to ignore the need for research in the practice arena. Having defined research and established the need for research, an examination of EBP is in order.

Think Outside the Box

Look at the different definitions for evidence-based practice. How do you see patient preferences meshing with research utilization?
Exploring EBP in Light of Research

Definitions of EBP

Many different definitions of EBP exist, and each definition tends to add another dimension to the concept of EBP. Each different dimension should be carefully and thoroughly considered as EBP is implemented to ensure that actual nursing practice is comprehensive. Within each definition, however, certain aspects are consistently identified. The consistent and unique aspects can be visualized as shown in Table 1-1.

Melnyk and Fineout-Overholt (2005) conceptualize EBP as a method that allows healthcare providers to deliver the maximum quality of care when addressing the multifaceted requests of their patients and families. In another article by Melnyk (2003), EBP is defined as “a problem solving approach to clinical decision making that incorporates a search for the best and latest evidence, clinical expertise and assessment, and patient preference and values within a context of caring” (p. 149). Both of these definitions reflect the use of problem solving with clinical involvement and patient contribution.

Rutledge and Grant (2002) define EBP as “care that integrates best scientific evidence with clinical expertise, knowledge of pathophysiology, knowledge of psychosocial issues, and decision making preferences of patients” (p. 1). This definition incorporates the ideas of pathophysiology and psychosocial components into the mix.

According to Porter-O’Grady (2006), “Evidence-based practice is simply the integration of the best possible research to evidence with clinical expertise and with patient needs. Patient needs in this case refer specifically to the expectations, concerns, and requirements that patients bring to their clinical experience” (p. 1). This definition tends to further emphasize the importance of the patient within the entire process.

Burns and Grove (2009) define EBP as “conscientious integration of best research evidence with clinical expertise and patient values and needs in the delivery of quality, cost-effective health care” (p. 699). Consequently, these authors integrate the idea of cost-effectiveness as an additional consideration when determining the appropriate EBP components.

Magee (2005) defines evidence-based medicine as “the conscientious, explicit, and judicious use of current best evidence in making decisions about the care of individual patients” (p. 73). The entire focus of this definition is evidence-based medicine. It is directed toward physician care, not nursing care.

Another definition submitted by Pravikoff et al. (2005) for EBP is “a systematic approach to problem solving for healthcare providers, including RNs, characterized by the use of the best evidence currently available” (p. 1).
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Table 1-1: Comparison of Qualities Included in Evidence-Based Practice Definitions
available for clinical decision making in order to provide the most consistent and best possible care to patients” (p. 40). For their part, Omery and Williams (1999) define EBP as “a scientific process [that], with its inherent ability to explain and predict, enhances a practice discipline’s ability to anticipate and guide interventions” (p. 50). Both of these definitions consolidate the idea of systematic processing with that of anticipatory consideration when providing nursing care.

DiCenso, Cullum, and Ciliska (1998) offer a model for evidence-based decision making that integrates research evidence, clinical proficiency, patient choices, and accessible assets. Within this model, each element is weighted differently based on the particular client circumstances. The evidence desired for an EBP process can be accessed via sources as diverse as bibliographical databases and a quality improvement department located within a healthcare agency. The evidence used within this process can include research, integrative reviews, practice guidelines, quality improvement data, clinical experience, expert opinion, collegial relationships, pathophysiology, common sense, community standards, published materials, and case studies. According to Ferguson and Day (2005), the forms of evidence, in descending order of credibility, include these:

1. Randomized, controlled trials
2. Single randomized, controlled trials
3. Controlled trials without randomization
4. Quasi-experimental studies
5. Nonexperimental studies
6. Descriptive studies
7. Expert consensus
8. Quality improvement data
9. Program evaluation data

While each of these forms of evidence is necessary and functional, the credibility of the evidence must be considered carefully when determining a plan of action. Each provides information to use in a decision-making process, and the support for the information (evidence) is better in those based on research than in those based on opinion.

Each of the proposed definitions supports the definition identified for this text, in which EBP is viewed as a process of using confirmed evidence (research and quality improvement), decision making, and nursing expertise to guide the delivery of holistic patient care. The four consistent aspects found within all of these definitions are (1) a decision-making process, (2) a clinical focus, (3) nursing expertise, and (4) client involvement (see Figure 1-1).

As evidence-based practice has evolved within the field of health care, the idea of what constitutes appropriate evidence has also matured.
While research results constitute the strongest category of evidence, other evidence—such as quality improvement results, policy/procedure confirmation, and protocol guideline confirmation—is nevertheless beneficial to the provision of safe and effective health care. Within the realm of EBP, each component of the evidence must be carefully assessed in terms of the strength and applicability of the information to the unique client setting. Each agency and nurse must critically consider the results and evidence available concerning an identified healthcare problem. As the results and evidence are thoroughly examined for practicality and efficiency, nursing care practices can be modified to manage the various aspects of care.

**Posing Forceful Clinical Questions**

Melnyk and Fineout-Overholt (2005) have declared that “The importance of asking the ‘right’ question cannot be overemphasized” (p. 27). The clarification of the question focuses the search for valid evidence so that it speaks to the issue under examination. According to DiCenso, Guyatt, and Ciliska (2005), “The searchable question requires focus to avoid complicating and time-consuming searches that retrieve irrelevant materials” (p. 23). As the issue under examination is carefully...
considered to determine the principal focus for the investigation, two components need to be considered. First, the initial attention should be directed to answering the “what, where, when, why, and how” aspects of the issue. Second, the scrutiny should then turn to the outcome of interest, which reflects the nursing diagnosis and/or research project.

Melnyk and Fineout-Overholt (2005) describe the two types of initial questions as background questions and foreground questions. Background questions address the core knowledge within the health-care field. This type of information provides a strong foundation of knowledge related to biological, psychological, and sociological facets of care that can be located in any textbook. Obtaining answers to these questions does not require access to research databases, because the information is preparatory to the provision of basic holistic care. In contrast, foreground questions address the “scientific evidence about diagnosing, treating, or assisting patients with understanding their prognosis” (Melnyk & Fineout-Overholt, 2005, p. 28). At this point in the process of EBP, the search for answers to the identified question focuses on the combination of core knowledge and scientific evidence.

Think Outside the Box

Within every organization, obstacles to incorporating changes such as evidence-based practice are present. Look at an institution. Which obstacles do you see? What can you do to confront and overcome these obstacles?

The use of the acronym PICOT is helpful in focusing the development of the foreground questions (Table 1-2). The PICOT acronym has the following meaning (Melnyk & Fineout-Overholt, 2005):

- **P** Patient population of interest
- **I** Intervention of interest
- **C** Comparison of interest
- **O** Outcome of interest
- **T** Time

In considering the population aspect within the question, time is needed to determine specific information about the characteristics of the group under investigation. This description could relate to age, gender, diagnosis, or ethnicity. The process needs to be specific enough to provide direction, while not restricting the search too much. According to Dawes et al. (2005), “There is a balance to be struck
Example 1: Labor and Delivery

You are a staff nurse in a rural hospital that performs 120 to 150 vaginal deliveries each year. Within the past 6 months, the institution has hired a certified registered nurse anesthetist (CRNA) to help with anesthesia for the facility. The CRNA and physicians have decided to begin offering epidural anesthesia for routine vaginal deliveries. You offer to seek out studies that address the use of epidural anesthesia in the labor and delivery process.

**Preliminary Question:** Is epidural anesthesia appropriate for all laboring patients?

**Clarification of Question:** This question identifies the population and time as *all laboring patients* and the intervention as *the use of epidural anesthesia*. It fails to document any comparison with other anesthesia methods or the outcome that the hospital is interested in achieving. Here is the PICOT analysis:

- **Population:** All laboring patients
- **Intervention:** Use of epidural anesthesia
- **Comparison:** Versus other anesthesia methods
- **Outcome:** Reduction in labor complications
- **Time:** Individuals in labor

**Revised Searchable Question:** For all laboring patients, will the administration of epidural anesthesia be more effective in reducing labor complications than other forms of anesthesia administered during the labor process?

Example 2: Routine Checkup

A 50-year-old man comes to the clinic for his yearly physical examination. His blood pressure is recorded as 158/90 mm Hg. He complains of frequent headaches during stressful periods. The patient has been fired from his place of employment. When you confer about the findings with him, he asks you about the potential of having a heart attack or stroke. Because these areas are regular potential complications identified within the clinic population, you elect to search for the best evidence to use for discussion with the clinic population.

**Preliminary Question:** Which type of patient information needs to be included in the teaching related to hypertension and cardiovascular accidents?

**Clarification of Question:** The limitations of this question include the failure to stipulate the population and to supply adequate particulars about the situation. Here is the PICOT analysis:

- **Population:** Ambulatory clients between the ages of 30 and 60 years
- **Intervention:** Development of cardiovascular symptoms such as hypertension and headaches
- **Comparison:** Ambulatory clients without cardiovascular symptoms
- **Outcome:** Development of cardiovascular complications
- **Time:** Within the initial year following diagnosis

**Revised Searchable Question:** Within the initial year following diagnosis, are ambulatory clients between the ages of 30 and 60 years who have developed cardiovascular symptoms at an increased risk for developing cardiovascular complications, such as stroke and acute myocardial infarction, compared with ambulatory clients who do not exhibit cardiovascular symptoms?

Example 3: Pediatrics

You work for the pediatric unit at the local hospital. The same children keep getting readmitted for earaches, injuries, and respiratory diseases. You have been assigned to prepare and deliver parenting classes for adolescent parents who have had their child admitted to the hospital. As you are thinking about the classes to be prepared, you question whether the adolescent parents are at greater risk and if they need different information than the general community of parents. You want to provide the most recent and best practices for child rearing.

**Preliminary Question:** Which type of information must be included in a parenting class for adolescent parents?

**Clarification of Question:** Although the population has been somewhat specified, additional clarification is needed. Other limitations within the preliminary question are the lack of clarification about the interventions, comparisons, outcomes, and time component of the PICOT. Here is the PICOT analysis:

- **Population:** Parents who have had children admitted to the hospital for reoccurring health problems
- **Intervention:** Parenting classes
- **Comparison:** Age of parents affects the information needed in the classes
- **Outcome:** Reduction in the number of admissions for reoccurring health problems
- **Time:** Within a 6-month period

**Revised Searchable Question:** Does the age of the parents (adolescent versus non-adolescent) influence the number of child admissions for reoccurring health problems within a 6-month period for parents who attend a parenting class program?

(continues)
between getting evidence about exactly your group of patients and getting all the evidence about all groups of patients” (p. 13). Care must be given to providing enough specificity to ensure that the search addresses the appropriate population while not excluding relevant information.

The depiction of the intervention for the question is another key aspect that necessitates careful thought and attention. This facet is the clear determination of the topic under consideration. It does not have to be an action step (and, therefore, an activity), but rather is the key topic for clarification. This aspect of the query should seek to potentially include “any exposure, treatment, patient perception, diagnostic test, or prognostic factor” (Melnyk & Fineout-Overholt, 2005, p. 29). Clarification of this aspect within the questioning process reduces the
potential for having to backtrack later when the results are not as clearly delineated as anticipated.

The third aspect of the question formation—the comparison of interest—is an optional facet within the questioning process. Within this component, the comparison of different treatment options would be analyzed. In many situations, alternative treatment decisions may not be available. The lack of supplementary preferences does not restrict the development of EBP guidelines.

The fourth aspect for consideration in foreground questions is the outcome of interest. According to Dawes et al. (2005), it is very important to carefully consider this aspect to determine exactly the outcome that is expected.

The final aspect on which to reflect is time. Timing for the outcome of interest is a principal characteristic to prudently contemplate. While time is not included in all PICOT questions, it is valuable for inclusion on those questions that can be directly affected by the passage of time.

Having presented these considerations for preparing the question(s) for concentrating the evidence-based search, it must be acknowledged that too specific a question can also be a major problem. According to Gennaro, Hodnett, and Kearney (2001), “A one-size-fits-all technical procedural protocol will not help” (p. 236). There is no single way to ask a searchable question. The PICOT format fosters clarification of the heart of the area for investigation. The overarching motivation must be the narrowing of the investigation to allow for the effective determination of evidence to strengthen the delivery of holistic nursing care for the client population.

As our thoughts move to the research process, the use of different types of questions for various research types must be clarified. Questions focusing on how many or how much are frequently answered through the use of quantitative studies. According to DiCenso et al. (2005), a quantitative question involves three components—population, intervention/exposure, and outcomes. Questions that are directed toward discovering how people feel or experience a specific state of affairs or environments are answered through the use of qualitative research designs. Qualitative questions are worded to include only two parts—population and situation (DiCenso et al., 2005). These questions focus on characteristics that provide a foundation for composing EBP questions and analyzing research results to confirm EBP practices.

**Research Utilization**

In the past, much lip service has been given to the need for nurses to apply research to practice. More recently, with the emergence and acceptance of EBP, the literature regarding research utilization in the
clinical arena has proliferated. The need for improved patient outcomes, decreased healthcare costs, greater patient safety, and higher patient satisfaction are driving forces for the use of scientific data in the decision-making process of nursing care provision (Table 1-3).

As a result of the promotion of using research as a basic component in nursing practice, one might ask, “Is nursing research being applied to nursing practice?” Surprisingly, the answer is both “yes” and “no.” Logic seems to dictate that if EBP can improve patient care, EBP should be implemented. Some healthcare organizations are beginning to incorporate EBP in their institutions. Unfortunately, obstacles for the use of EBP often focus primarily on research utilization.

Obstacles to Using Research

Much of the literature discusses barriers to using research for the guidance of practice. Webster’s II New College Dictionary (1999) defines a barrier as “something that hinders or restricts; a boundary; limit” (p. 91).

<table>
<thead>
<tr>
<th>Table 1-3</th>
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<tbody>
<tr>
<td><strong>Suggested Resources to Support the Retrieval and Appraisal of Evidence</strong></td>
</tr>
<tr>
<td>Agency for Healthcare Research and Quality (<a href="http://www.ahrq.gov">www.ahrq.gov</a>)</td>
</tr>
<tr>
<td>Cochrane Database of Systematic Reviews (<a href="http://www.update-software.com/publications/cochrane">www.update-software.com/publications/cochrane</a>)</td>
</tr>
<tr>
<td>Institute of Medicine of the National Academies (holds the documents produced by the IOM related to patient safety; <a href="http://www.iom.edu">www.iom.edu</a>)</td>
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<tr>
<td>Joanna Briggs Institute (<a href="http://www.joannabriggs.edu.au">www.joannabriggs.edu.au</a>)</td>
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<tr>
<td>The Joint Commission (<a href="http://jointcommission.org">http://jointcommission.org</a>)</td>
</tr>
<tr>
<td>Medscape (integrated information and educational tools; <a href="http://www.medscape.com/nurseshome">www.medscape.com/nurseshome</a>)</td>
</tr>
<tr>
<td>National Comprehensive Cancer Network (<a href="http://www.nccn.org">www.nccn.org</a>)</td>
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<tr>
<td>National Guidelines Clearinghouse (<a href="http://www.guideline.gov">www.guideline.gov</a>)</td>
</tr>
<tr>
<td>Oncology Nursing Society (ONS)—EBP Online Resource Center “Evidence Search” section (<a href="http://onsopcontent.ons.org/toolkits/evidence/ProcessModel/references.shtml">http://onsopcontent.ons.org/toolkits/evidence/ProcessModel/references.shtml</a>)</td>
</tr>
<tr>
<td>Registered Nurses’ Association of Ontario (RNAO), Best Practice Guidelines (<a href="http://www.rnao.org/Page.asp?PageID">www.rnao.org/Page.asp?PageID</a> = 861&amp;SiteNodeID = 133)</td>
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<tr>
<td>Sarah Cole Hirsh Institute (<a href="http://fpb.case.edu/Centers/Hirsh">http://fpb.case.edu/Centers/Hirsh</a>)</td>
</tr>
<tr>
<td>School of Health and Related Research (SCHARR), University of Sheffield—Netting the Evidence (<a href="http://www.shef.ac.uk/scharr/ir/netting">www.shef.ac.uk/scharr/ir/netting</a>)</td>
</tr>
<tr>
<td>Sigma Theta Tau Virginia Henderson Library. (<a href="http://www.nursinglibrary.org/portal/main.aspx">www.nursinglibrary.org/portal/main.aspx</a>)</td>
</tr>
<tr>
<td>Studentbmj.com: International Medical Student's Journal (<a href="http://studentbmj.com/back_issues/0902/education/313.html">http://studentbmj.com/back_issues/0902/education/313.html</a>)</td>
</tr>
<tr>
<td>University of Alberta—Evidence Based Medicine Tool Kit (<a href="http://www.ebm.med.ualberta.ca/ebm.html">www.ebm.med.ualberta.ca/ebm.html</a>)</td>
</tr>
<tr>
<td>University of North Carolina at Chapel Hill Health Sciences Library (<a href="http://www.hsl.unc.edu/services/tutorials/ebn/index.htm">www.hsl.unc.edu/services/tutorials/ebn/index.htm</a>)</td>
</tr>
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Note: Access verified February 17, 2009.
A barrier seems to imply a structure that impedes success. Perhaps another word better defines the utilization of research to nursing practice—obstacle. An **obstacle** is “one that opposes, stands in the way of or diverts passage or progress” (Webster’s II New College Dictionary, 1999, p. 755). An obstacle can be overcome. As a result, the term “obstacle” will be used instead of “barrier” when discussing reasons for not employing research utilization in evidence-based nursing care.

The nurse strives to identify ways to overcome each impediment in the path to success; thus it becomes a challenge to overcome the hindrance and be successful. The use of theories can be viewed as a barrier within the application of research, for example. The complexity of theories and functionality of using theories within the field of research can be perceived as a challenge by the nurse providing care at the bedside. An in-depth discussion of theories is beyond the scope of this textbook, although a general dialogue about the use of theories within the research process will be provided in several chapters. Nurses at the bedside do need to understand the connection between theory, research, and practice.

**Think Outside the Box**

Discuss the role of clinical expertise in evidence-based practice.

While it may seem simple to apply research to practice, it is actually a complex problem. Three major categories of obstacles deter nurses from readily incorporating research into their practice—education, beliefs/attitudes, and support/resources. Staffileno and McKinney (2011) and Whitmer, Auer, Beerman, and Weishaupt (2011) suggest many nurses don’t have enough time, support, mentoring or sufficient education to use EBP in their practice.

**Education**

Educational preparation ranks high on the list of obstacles to using research for the guidance of practice. Omery and Williams (1999) suggest that the more education a nurse has, the greater the chance the nurse will use research in providing patient care. The majority of nurses (57%) practicing in the United States are prepared at the associate degree (ADN) or diploma level, and most ADN programs do not include research in their curricula (Estabrooks, 1998). If, as Estabrooks suggests, nurses practice as they were taught, then few nurses today have knowledge about research. It is common to hear, “That’s the way I was taught.” Considering that the average age of nurses is 47, the
fallacy of that line of thinking becomes apparent; such a nurse may have been taught 20 to 25 years ago. Research may appear to be too “mystical” and have no relevance to nurses educated during that time period.

Another aspect of educational preparation that influences a nurse’s use of research is the way in which research is taught. Even though baccalaureate and graduate programs include research courses in their curriculum, many graduates continue to resist engaging in or exploring research. Learning research can be likened to learning a foreign language. Carroll et al. (1997) state, “Researchers often present their findings in technical language that is difficult to understand” (p. 209). It is a common misperception that only an academician at a state-of-the-art university can conduct research. The idea that research is practical and beneficial, if linked to clinical practice, appears to be poorly explained to novice nurses. It is therefore no wonder nurses do not understand research, much less want to use it in their practice. Without adequate motivation to use all aspects of an educational program, nurses are unwilling to translate research to practice.

Beliefs/Attitudes
A major portion of the literature attributes the lack of research use by nursing professionals to beliefs and attitudes regarding research. Several authors (Carroll et al., 1997; Cronenwett, 2002; Jolley, 2002; Omery & Williams, 1999; Pravikoff et al., 2005) suggest that negative attitudes about research use represent obstacles for incorporating EBP into nursing care. This is true of both healthcare organizations and individual nurses. If organizations perceive that research has a lack of value for their operations (Jolley, 2002), then little support will exist for EBP within the organization. If nurses feel intimidated (Yoder, 2005) or lack confidence in their ability to use research (Cronenwett, 2002), then nurses will not actively incorporate research into their practice.

Support/Resources
The third major category of obstacles to the incorporation of EBP is support and resource availability. Too often, administrators list “cost” as a reason for limiting or hindering the use of EBP. When a nursing shortage exists, staffing becomes a major issue. Allowing staff adequate time to do the requisite reading to update their clinical or EBP knowledge or to attend continuing nursing education offerings is not always possible in such circumstances.

Another problem relates to the lack of access to or availability of research materials. Many organizations do not have a library, librarian,
or personnel familiar with accessing current research findings. Nurses who lack computer skills may not know how to conduct online searches. For this reason, without the assistance of a library, librarian, or information technology personnel, nurses may not seek out EBP data. Both new and older generations of nurses have little, if any, expertise in using search engines. Even when a nurse has the requisite knowledge and skill to be able to conduct EBP database searches, state and federal policies may prevent the searches from being conducted within the healthcare organization. For example, privacy issues relating to HIPAA guidelines inhibit access to the World Wide Web from agency computer systems.

One can easily understand why EBP has a steep learning curve, as practitioners struggle to overcome these obstacles. Lack of nursing educational preparation, lack of value assigned to research by organizations and individual nurses, and lack of support/resources must be critically examined, and solutions to these problems must be found, if nursing is to promote widespread use of EBP. According to Vratny and Shriver (2007), “Leadership, enthusiasm, mentorship, clinical inquiry, and reflective practice are what really make evidence-based practice grow, thrive, and come to light” (p. 166).

In the future, as agencies support nurses in recognizing the extent of improvement possible in clinical care and patient outcomes through the use of EBP, nurses will seize the opportunity to move nursing care forward and seek empowerment as part of their professional growth. Of course, expecting all organizations and every nurse to conduct research is unrealistic. Nevertheless, use of research in EBP provides the opportunity for research utilization by all.

Responsibility for Using Research

Given the formidable obstacles to research, why do research at all? Few would argue with the premise that having evidence to improve patient outcomes is desirable. As Brockopp and Hastings-Tolsma (2003) say, “Professional nurses have the responsibility to participate in the promotion of evidence-based practice. Such expectations are both societal and professional” (p. 459). A better-informed consumer will inevitably demand higher-quality care. Thus, given their greater accessibility to healthcare information, today’s healthcare consumers expect nurses to use the most current data available to provide quality care. To do so, nurses must continuously explore new evidence and incorporate that evidence into nursing practice. Carroll et al. (1997) have suggested, “The possession of a body of knowledge from research is the hallmark of a profession” (p. 208). Fain (2009) recommends that nurses take an active role in developing a body of knowledge. As
a relatively new profession, nursing has the responsibility to generate scientific data and to use that data to achieve optimal outcomes. EBP uses the best clinical data available in making decisions about nursing care. Thus the profession demands that nurses not only be responsible for the use of research, but also participate in research to add to the body of nursing knowledge through EBP.

According to Kitson (2007), “Health administrations across the world are looking to understand how best to improve the quality, effectiveness, and safety of the health care they deliver” (p. S1). Two key movements in health care have led to this quest for excellence: quality/safety initiatives and the evidence-based practice innovation. By striving to acquire a foundation of knowledge while holding fast to honesty, integrity, and respect for the wide variety of perspectives and experiences within the healthcare delivery system, nursing can establish a firm base on which to build the practice of health care for each individual patient encountered.

Overcoming obstacles to the use of research in practice can improve patient outcomes, decrease costs, and increase the body of knowledge for the nursing profession as a whole. Nursing practice leads to research questions, and vice versa. Practice and research as evidence confirmation are inseparable pieces of the puzzle of EBP, as depicted in Figure 1-1. Posing questions about nursing care frequently generates scientific data, which in turn often generate further questions to be explored.

The Importance of Generating Evidence

**Discovering Significant Evidence**

As stated earlier, to practice nursing based on “how we are taught” assumes that there is no further need to produce evidence. That dangerous assumption was investigated as early as 1975, when Ketefian’s study revealed that nurses did not use research for making decisions about nursing care (Polit & Beck, 2008).

Lack of innovation and failure to develop a rationale for nursing care will result in a decrease in respect for nursing as a profession. Currently, consumers of health care list nurses/nursing as one of the most respected roles in today’s society (Jones, 2010). Consequently, generating and using scientific evidence can only improve the image of nursing and provide better outcomes from nursing care.

Another force underlying the need for generating evidence, and its incorporation into practice, is the increasing cost of health care. Healthcare costs are spiraling upward at an uncontrollable rate that demands nurses perform their work in the most cost-effective way.
As Bucknall (2007) notes, “Without an assessment of the extent to which the facts are relevant and contribute to a particular conclusion, they remain simply facts rather than evidence” (p. S61). Each and every fact must be carefully gauged to ensure that the cost of delivering the care remains within an acceptable level while still leading to high-quality, high-safety health care. In fact, the nursing profession cannot afford to ignore innovative approaches in nursing care that will reduce costs while simultaneously improving outcomes.

**Impact on Practice**

The potential impact of using research in evidence-based nursing practice is enormous. No longer can nurses rely on “how I was taught” or a “gut feeling.” Research provides tangible scientific data to promote optimal patient outcomes. The nurse at the bedside must be an integral participant in the development of EBP. Nurses are the individuals who observe what works and what does not work in the real world of health care. The expertise that this hands-on practice brings to the research process is of paramount importance to the effective development of a body of nursing knowledge.

Patients interact with nurses and, as surveys indicate, trust them with their care. As a result, nursing practice that incorporates research also increases patient satisfaction. In turn, assisting a patient to recover health brings satisfaction to the nurse and helps keep the cost of health care at an acceptable level.

Within the current healthcare environment, nurses are expected to embrace continuous performance improvement (CPI) processes such as Six Sigma and the Plan–Do–Study–Act (PDSA) cycle. These continuous improvement processes are being driven by the IOM’s Health Profession Education: A Bridge to Quality (2003) document, which identified five core areas of concern: providing patient-centered care, working in interdisciplinary teams, employing evidence-based practice, applying quality improvement, and utilizing informatics. According to Finkelman and Kenner (2007), “The report [IOM] recommends (1) adopting transformational leadership and evidence-based management, (2) maximizing the capability of the workforce, and (3) creating and sustaining cultures of safety” (p. 8). As a result, nurses are confronted with the challenges of transforming care at the bedside (TCAB); situation, background, assessment, recommendation (SBAR) communication strategies; electronic medical records (EMR); and other healthcare trends such as the ACA, IOM/RWF and Carnegie Foundation reports. Change is imperative for each of us working within the healthcare field. It is our responsibility to become knowledgeable about the evidence that is available as we select mechanisms to address these core areas and national imperatives to change and transform care provided by nurses.
Nurses must ask targeted, concise questions about the nursing care that is being provided. According to Rolston-Blenman (2009), “Successfully embracing a culture of change and innovation requires enlisting nurses to champion the objectives and empowering them to design the tools they need for success on the frontline” (p. 25). Settling for the status quo is no longer acceptable. Instead, nurses must take the lead in querying the healthcare delivery venue as to the appropriateness and safety of the care being provided. According to Yoder (2008), “By deploying the broadest range of solutions possible, organizations can significantly improve communication among providers, decrease care delays, and enable clinicians to spend more time with patients, all of which can lead to improved outcomes” (p. 26). Evidence-based nursing practice requires that each nurse develop this “inquiring mind” posture to ensure that the resulting patient outcomes are of high quality, safe, and appropriate in the current healthcare arena.

Nursing is truly both an art and a science. EBP not only provides elements of each aspect, but also contributes to the profession’s overall development. As a result, EBP improves everyday practice by providing empirical data to guide nursing interventions. In addition, prompted by national developments mentioned above, nurses need to collaborate with physicians and other healthcare providers to improve patient outcomes. Generating evidence for use by all professionals requires teamwork and collaboration, as silos of research are no longer the standard approach. As a result, partnerships of individuals and agencies allow for more efficient use of resources and decreased costs.

Summary Points

1. Recent national legislation and reports have had an impact on the importance of evidence-based practice (EBP) and research utilization.
2. A core body of nursing knowledge is derived from the process in which research is incorporated into practice; this process has been called best practice, quality of care, and evidence-based practice.
3. EBP is a process of utilizing confirmed evidence (research and quality improvement), decision making, and nursing expertise to guide the delivery of holistic patient care.
4. The PICOT acronym provides a mechanism for posing forceful, clinical questions to generate scientific questions.
5. Obstacles for research utilization can be categorized into three areas: education, beliefs/attitudes, and support/resources.
6. Generating evidence adds to the core of nursing knowledge, which promotes nursing as a profession.
7. The combination of nursing practice and research is essential to developing EBP.
8. Safe, effective patient care is not a luxury, but rather a necessity.
• Within the documentation of a research project, certain decisions concerning the planning and implementation of the process must be supported by rationales. In EBP, randomized controlled trials are viewed as the most powerful evidence. As a result, some research aspects are viewed as stronger designs (quantitative, experimental, and randomized sampling) than other facets of the process. In this text, the designation of a red flag will reflect features of the research project that are less stringent than others. These areas are not strictly forbidden within research, but rather are concerns that need to be taken into account. Within the documentation, these aspects should be supported by rationales reflecting the thought process for utilization of those pieces.

• When a nurse is appraising an article for inclusion in an EBP situation, the presence of red flags should be seen as an opportunity to assess the justification for the decisions made by the research team. If the research team has provided an adequate justification for its research decisions, a study characterized by multiple red flags can still be a strong study. The documentation of the research report by a researcher is a process of validation and justification of the various judgments made during the planning process. The researcher has the responsibility to document the reasoning for the decisions incorporated into the study such as ethics, sampling, design, and data collection.

• Red flags are areas within the documentation of the study that may raise concerns. These areas are not items that should never be done, but rather are items that should be supported by sound, clear rationales as to why the researcher used the research components.
Multiple Choice Questions

1. One of the primary foundations for evidence-based nursing practice is
   A. Medical knowledge.
   B. Research results.
   C. Everyday health care.
   D. Textbook information.

2. Within the process of providing evidence-based nursing care, which types of research results are incorporated to ascertain the plan of treatment?
   A. Personal experiences and medical knowledge
   B. Client values and medical knowledge
   C. Personal experiences and client values
   D. Medical knowledge and identified challenges

3. As a novice nurse on a medical–surgical hospital unit, you want to get involved in a research study that is being proposed for your unit. Because your hospital is involved with evidence-based nursing practice, which aspects of EBP are essential for you to have?
   A. Sound bedside nursing skills
   B. Basic knowledge of your unit
   C. Method for accessing published information
   D. Fundamental safety knowledge

4. Which of the EBP components carries the greatest weight in determining the management of the clinical situation?
   A. Thought process
   B. Client preferences
   C. Research
   D. The situation

5. Evidence comes in many forms. Examples of the data that could best be utilized for EBP are
   A. Quality improvement data and integrated reviews.
   B. Integrated reviews and non-peer-reviewed journal articles.
   C. Collegial relationships and lay journals.
   D. Verbal data and practice guidelines.

6. When developing a question to drive the compilation of evidence for a specific practice situation, the five components that can be used to focus the investigation are
   A. Patient, situation, intervention, comparison, and practice.
   B. Situation, intervention, comparison, outcome, and time.
   C. Patient, intervention, comparison, outcome, and time.
   D. Patient, situation, intervention, outcome, and data.
7. A nurse working in a cancer follow-up setting has been asked to consider the development of a transition program to help young people adjust to the adult program. The initial question suggested for use in focusing the identification of evidence is “What is it like to have care transferred from a pediatric center to an adult clinic?” Which aspects of this question need to be strengthened to make it more searchable?
A. Population and outcome
B. Population and intervention
C. Intervention and outcome
D. Comparison and outcome

8. Research utilization has often been
A. Neglected in the literature.
B. Denied by publishers.
C. Reported in the literature.
D. Spurned by EBP

9. Obstacles to using nursing research in practice include lack of
A. Education, beliefs/attitudes, and support/resources.
B. Faculty, knowledge, and cost.
C. Time, beliefs/attitudes, and consumers.
D. Outcomes, values, and motivation.

10. As a nurse on a medical–surgical hospital unit, you begin to question the amount of time your hospital policy requires for taking a patient’s oral temperature. Your hospital uses an EBP approach to nursing care. Which hospital resources would you expect to be able to connect with to assist with the accessing of a computer?
A. Ward clerk or CNA
B. Doctor or lawyer
C. Charge nurse or supervisor
D. Librarian or library

11. You are a BSN-prepared nurse who wants to initiate a research project on your unit. To get the other nurses to participate, you would
A. Ask the doctors what they think.
B. Check the educational level of other nurses on the unit.
C. Ignore your desire to learn more at this time.
D. Give a presentation to your peers on the benefits of research.

12. In the past, nurses were often taught that while research might be a good thing to do, only faculty could do research because
A. Faculty members are the only ones prepared to do research.
B. Most nurses have not been taught research.
C. Most nurses don’t need to use research.
D. Faculty members know what’s best for nursing.
13. Many nurses don’t understand research because
   A. Research isn’t necessary for their practice.
   B. Most nurses are too old.
   C. Research is like a foreign language.
   D. Patients don’t expect them to use research.

14. Research is often not valued because
   A. It costs too much.
   B. Administration wants it.
   C. Search engines are easy to access.
   D. Staffing is not an obstacle.

15. Nurses have a responsibility to use research because
   A. Doctors order it done.
   B. Administrators don’t have time for research.
   C. Research is nice to know.
   D. Research is the “hallmark of a profession.”

16. The ACA, IOM/RWJF and Carnegie Foundation reports are national movements to
   A. Reaffirm current nursing practice.
   B. Ignore current nursing practice.
   C. Transform current nursing practice.
   D. Eliminate current nursing practice.
1. You are a public health nurse working in an outpatient hospice facility. You are responsible for clients and their families in a six-county area. During the course of a week, you have from six to ten clients or their families who experience stressful situations related to the disease process. These families and their loved ones experience anguish and guilt as they confront and deal with the terminal nature of the healthcare situation. You have been asked to explore the following question: How do others in this type of situation deal with the numerous stressful challenges? Which type of searchable question could you develop to drive the data search related to this request?

2. As a BSN staff nurse, you are excited that your hospital wants you to participate in an evidence-based project. You have been chosen to chair a taskforce. How would you approach this task?

3. You are an ADN-prepared staff nurse at an acute care facility who has enrolled in an RN-BSN program. One of the key messages presented by the RN-BSN program is the importance of evidence-based nursing practice. In your first course in the program, you are asked to identify an evidence-based topic for development. The faculty members instruct you to select a topic that will be functional in your workplace. Which types of activities would you carry out to aid in the selection of this topic?
Suggested Readings


References


Chapter 1  Connection Between Research and Evidence-Based Practice


