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 affects nursing practice

Key Terms

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

Introduction

Regardless of the specific health care 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. Let's consider the idea of asthma information, although any disease process could be utilized. 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 situation. The application of the information for each of the client situations presented here 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 uniqueness of the client and the situation. Although we realize that the health care field defines *client* and *patient* differently, for purposes of this text, these terms are used interchangeably.

Pravikoff, Tanner, and Pierce (2005) described the process of EBP to include 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, then, the utilization of tested research results to improve the care provided for the clients. According to Ciliska, Cullum, and Marks (2001), "the three basic appraisal ques-

tions are the same whether the clinical question is about treatment, diagnosis, prognosis, or causation:

- Are the results of the study valid?
- What were the results?
- Will the results help me in caring for my patients?" (p. 1 of 10)

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 health care arena.

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

Health care is a complex system addressing multiple health-related aspects in an endeavor to accomplish the anticipated outcome for the client. Throughout the health care 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

Think Outside the Box ?

Make a list of the tasks that are routinely done by nurses during a typical clinical day. Carefully consider what evidence you have used as the foundation for these tasks. Are the skills for the tasks based on research, personal preferences, clinical guidelines, or traditions?

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 allows for patient confidence in the nurses' commitment to quality health care. Nurses should not rely on unsubstantiated treatment plans but 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.

The practicing nurse has to value the idea of the EBP process in order 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 health care provider may utilize the optimum 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 researched data and to include the client's perspective. The use of unconfirmed reports, hearsay, and unfounded information, and the lack of client input do not fit with the provision of sound, quality nursing care at this point in time.

Fineout-Overhold and Melnyk (2005) stated 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 is 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 with each client encounter that the nurse has. It is not stagnant but 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. 2 of 12). Even when nurses do not want to be actively involved in an actual research project, they must understand the method for accessing published information and assessing it for applicability. At times, a knowledge base is unconsciously incorporated, because the nurse seems to administer the nursing care plan without directly acknowledging the 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 re-

sulting 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. 1 of 13). This anticipation and guidance related to a discipline's ability to practice results from the incorporation of sound evidence ensuing from the outcome of 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-Overhold (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 critiquing and applying the evidence to the practice arena.

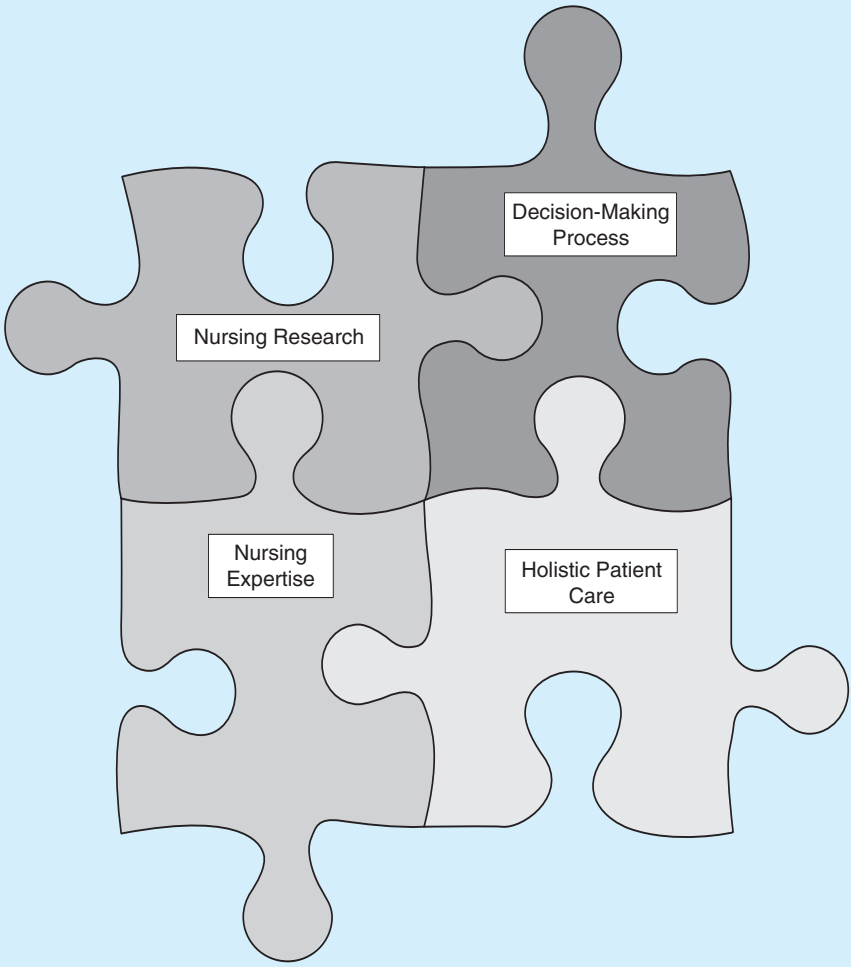
Each of these aspects—thought process, client preferences, research, and nursing expertise—is included in the EBP definition used in this textbook (**Figure 1-1**). Although all these aspects are required, the actual situation directs the weighting of the aspects, because each situation is unique. Melnyk (2004) acknowledged 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. Within this textbook, EBP is defined as a research-based, decision-making process used 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.

Assessing the Need for Research in the Practice Arena

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 health care setting, regularly identifies nursing aspects of care. Those aspects of care may seem to (a) appropriately address the care needs of the client, (b) not fit the current accepted provision of care, or (c) 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

Figure 1-1

Evidence-Based Practice Representation



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 health care community is also encouraging this questioning in order to identify the best methods for the provision of care. The idea behind EBP is the expectation of getting everyone 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 the clients. To do this effectively, nurses must base the provision of care on results that support the care being administered in a wide variety of health care settings.

Cronenwett (2002) 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 of 19). 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 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 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.

Think Outside the Box ?

Look at the different definitions for evidence-based practice. How do you see patient preferences meshing with research utilization?

The entire process of critiquing research articles and conducting research projects is designed to strengthen the nursing professional's critical thinking abilities, thus allowing for the most holistic care possible in the work environment. Malloch and Porter-O'Grady (2006) denoted that the critical skill required for effective EBP is the ability of nursing professionals to analytically examine research results and evidence to determine the optimum data to use in the provision of holistic health care on a day-by-day basis. Without this foundation of how to methodically examine the evidence, nurses are left to vacillate among varying interpretations of health care information.

Exploring EBP in Light of Research

Definitions of EBP

Many different definitions of EBP exist. 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 the practice is comprehensive. Within each definition, however, certain aspects are consistently identified. The consistent and unique aspects can be visualized in the provided table (**Table 1-1**).

Melnyk and Fineout-Overholt (2005) conceptualized EBP as a method that allows health care providers to accomplish 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 incor-

Table 1-1

Comparison of Qualities Included in Evidence-Based Practice Definitions

Author (year)	Quality of care	Multifaceted	Decision-making process	Clinical focus	Foundation of practice	Client involvement	Other aspects
Melnyk & Fineout-Overholt (2005)	XX	XX					
Melnyk (2003)			XX	XX	Evidence, expertise, assessment	XX	
Rutledge & Grant (2002)			XX	XX	Evidence, expertise, pathophysiology, psychosocial		
Porter-O'Grady (2006)				XX	Evidence, expertise	XX	
Burns & Grove (2001)	XX				Research	XX	Cost
Magee (2005)			XX		Evidence	XX	
Pravikoff, Tanner, & Pierce (2005)			XX	XX	Evidence	XX	
Omery & Williams (1999)			XX		Expertise		
DiCenso, Cullum, & Ciliska (1998)			XX	XX	Evidence, proficiency	XX	Assets

porates a search for the best and latest evidence, clinical expertise and assessment, and patient preference and values within a context of caring" (p. 6 of 7). Both of these definitions reflect the use of problem solving with clinical involvement and patient contribution.

Rutledge and Grant (2002) defined 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 for consideration.

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 (2001) defined EBP as "using collective research findings to (a) *promote* understanding of patient and family experiences with health and illness, (b) *implementing* effective nursing interventions to promote health, and (c) *providing* quality cost effective care in the health system" (p. 4). Consequently, Burns and Grove integrated the idea of cost effectiveness as an additional consideration when determining the appropriate EBP components.

Magee (2005) defined 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 health care providers, including RNs, characterized by the use of the best evidence currently available for clinical decision-making in order to provide the most consistent and best possible care to patients" (p. 1 of 17). Omery and Williams (1999) submitted a definition for EBP as "a scientific process, with its inherent ability to explain and predict, enhances a practice discipline's ability to anticipate and guide interventions" (p. 1 of 13). Both of these definitions consolidate the idea of systematic processing with the idea of anticipatory consideration when providing nursing care.

DiCenso, Cullum, and Ciliska (1998) offered 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 within a health care agency. The evidence utilized within the 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 (a) randomized, controlled trials; (b) single randomized, controlled trials; (c) controlled trials without randomization; (d) quasi-experimental studies; (e) nonexperimental studies; (f) descriptive studies; (g) expert consensus; (h) quality improvement data; and (i) program evaluation data. Each of these sources of evidence is necessary in light of the foundation on which the types of the evidence is suggested. The principle challenge for the nursing profession is the establishment of criteria for assessing and determining acceptable evidence.

As can be seen, each of these definitions supports the definition identified for this text. EBP is viewed to be a research-based, decision-making process utilized to guide the delivery of holistic patient care by nurses. The consistent aspects within all of these definitions are (a) decision-making process, (b) clinical focus, (c) expertise, and (d) client involvement (see Figure 1-1).

Posing Forceful Clinical Questions

Melnyk and Fineout-Overholt (2005) declared that "the importance of asking the 'right' question cannot be overemphasized" (p. 27). The clarification of the question focuses on the search for valid evidence to speak 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 principle 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(es) and/or research project(s).

Melnyk and Fineout-Overholt (2005) listed the two types of initial questions as background questions and foreground questions. Background questions are viewed as those addressing the core knowledge that is held by the health care body of knowledge. This type of information provides the foundation related to biological, psychological, and sociological facets that can be located in any textbook. Obtaining answers to these questions does not require research databases, because the information is preparatory to the provision of basic holistic care. Foreground questions are envisioned to address the "scientific evidence about diagnosing, treating, or assisting patients with

understanding their prognosis" (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 your institution. What are the obstacles you see? What can you do to confront and overcome these obstacles?

The use of the acronym PICOT seems helpful in focusing the development of the foreground questions (**Table 1–2**). The *PICOT* acronym reflects the following (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 persona 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 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 determining 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 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.

Table 1-2

Examples of Searchable Questions for Research in EBP

Example 1: Labor and Delivery

You are a staff nurse in a rural hospital that performs approximately 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.

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 administrated 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. He is complaining of frequent headaches during stressful periods. He 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: What 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.

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 strokes and acute myocardial infarctions, compared with ambulatory clients who do not exhibit cardiovascular symptoms?

Example 3: 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: What 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 expected.

Population: Parents who have had children admitted to the hospital for reoccurring health problems

continues

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?

Example 4: A 75-year-old woman who had been admitted to the hospital for cervical cancer treatment asks to talk with you about general cancer-related issues. She has three children between the ages of 40 and 55 years. She is worried about their potential for developing cancer and wants to know what she should tell them about getting routine checkups. She does tell you that her father died of colon cancer at the age of 71 years.

Preliminary Question: What type of routine screening examinations should be performed for children who have a family history of cancer?

Clarification of Question: Within this question, the population is briefly delineated. The question does not clearly denote the intervention, the outcome, or the time anticipated.

Population: Individuals with a family history of cancer

Intervention: Scheduling of routine cancer screening examinations

Comparison:

Outcome: Early diagnosis of cancer

Time: Routine cancer screening examinations

Revised Searchable Question: For individuals with a family history of cancer, what effect does the timing of routine cancer screening examinations have on the early diagnosis of cancer compared with those individuals who do not have an identified family history of cancer?

The final 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. Timing for the outcome of interest is a principle characteristic to prudently contemplate.

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. 2 of 13). 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.). These questions format characteristics 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. Most recently, with the emergence and acceptance of EBP, the proliferation of literature regarding *research utilization* in the clinical arena is evident. The need for improved patient outcomes, decreased health care costs, and 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

Table 1-3

Suggested Resources to Support the Retrieval and Appraisal of Evidence

Oncology Nursing Society (ONS)—EBP Online Resource Center "Evidence Search" section (http://onsopcontent.ons.org/toolkits/ebp/process_model/evidence_search.htm)
National Library of Medicine Web site, which allows free searches of MEDLINE through PubMed (www.ncbi.nlm.nih.gov/entrez/query.fcgi)
Schulmeister, L., & Vrabel, M. (2000). Searching for information for presentations and publications. *Clinical Nurse Specialists, 16*, 79–84.
Morrisey, L. J., & DeBourgh, G. A. (2001). Finding evidence: Refining literature searching skills for the advance practice nurse. *AACN Clinical Issues, 12*, 560–577.
National Guidelines Clearinghouse (www.guideline.gov)
National Comprehensive Cancer Network (www.nccn.org)
Agency for Healthcare Research and Quality (www.ahrq.gov)
Cochrane Database of Systematic Reviews (www.update-software.com/publications/cochrane)
University of Alberta—Evidence Based Medicine Tool Kit (www.med.ualberta.ca/ebm/ebm.htm)
Registered Nurses' Association of Ontario (RNAO) Best Practice Guidelines (www.rnao.org/Page.asp?PageID=861&SiteNodeID=133)
Centre for Evidence-Based Nursing (York, UK; www.york.ac.uk/healthsciences/centres/evidence/cebn.htm)
Joanna Briggs Institute (www.joannabriggs.edu.au)
Sarah Cole Hirsh Institute (http://fpb.cwru.edu/HirshInstitute)
School of Health and Related Research (ScHARR), University of Sheffield—Netting the Evidence (www.shef.ac.uk/scharr/ir/netting)
University of Illinois College of Medicine at Peoria (http://www.uicomp.uic.edu/IntMedRes/teach/question.htm)
Studentbmj.com: International Medical Student's Journal (http://studentbmj.com/back_issues/0902/education/313.html)

"no." Logic seems to dictate that if EBP can improve patient care, EBP should be implemented. Some health care 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 to guide practice. *Webster's* (1999) defined a barrier as "something that hinders or restricts; a boundary; limit" (p. 91). A barrier seems to imply a structure that impedes success. Perhaps another word better defines the utilization of research to nursing practice. An *obstacle* is "one that opposes, stands in the way of or diverts passage or progress" (p. 755).

Think Outside the Box ?

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

An obstacle can be overcome. As a result, the term *obstacle* will be used in place of barrier when discussing reasons for not employing research utilization in evidence-based nursing care. The nurse strives to identify ways to overcome the impediment in the path to success. It thus becomes a challenge to overcome the hindrance to be successful.

While it may seem simple to apply research to practice, it is a complex problem. Three major categories of obstacles deter nurses from incorporating research into their practice—education, beliefs/attitudes, and support/resources.

Education

Educational preparation ranks high on the list of obstacles. Omery and Williams (1999) suggested that the more education a nurse has, the greater the chance the nurse will use research in providing patient care. Keeping in mind that the majority of nurses (57%) practicing in the United States are prepared at the Associate Degree (ADN) or Diploma level, most ADN programs do not include research in their curricula (Estabrooks, 1998). If, as Estabrooks suggested, nurses practice as they were taught, then few nurses today have knowledge about research. You will frequently hear "that's the way I was taught." When you consider that the average age of nurses is 47, the fallacy of that line of thinking is that 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 that research is taught. Even though baccalaureate and graduate programs include research courses in their curricu-

lum, many graduates still resist research utilization. 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. 3 of 10). Research seems to be presented as if only an academician at state-of-the-art universities can conduct research. The idea that research is practical and beneficial, if linked to clinical practice, appears to be poorly offered to novice nurses. No wonder nurses don't understand research, much less want to use research 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 to beliefs and attitudes regarding research. Several authors (Carroll et al., 1997; Cronenwett, 2002; Jolley, 2002; Omery & Williams, 1999; Pravikoff et al., 2005) suggested that negative attitudes about research use are obstacles for incorporating EBP into nursing care. This is true of both the organization and individual nurses themselves. If there is a lack of value for research by organizations (Jolley, 2002), then little support will exist for EBP. If nurses feel intimidated (Yoder, 2005) or lack confidence in the ability to use research (Cronenwett, 2002), then nurses themselves will not incorporate research into practice.

Support/Resources

The third major category of obstacles to the incorporation of EBP is support and resource availability. Too often, administration lists cost as a reason for limiting or hindering EBP. In the case of a nursing shortage, staffing becomes a major issue. Allowing staff time to do the requisite reading to update their clinical or EBP knowledge or to attend continuing nursing education offerings is not always possible.

Another problem lies with 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 do not know how to conduct online searches. Without a library, librarian, or information technology personnel, nurses do not seek EBP data. The new generation of nurses has little, if any, expertise in 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 health care organization. For example, privacy issues relating to HIPAA guidelines inhibit access to the Web from agency computer systems.

No wonder EBP has a steep curve for overcoming obstacles. Lack of nursing educational preparation, lack of value for research by orga-

nizations and nurses, and lack of support/resources must be critically examined and solutions must be found in order to promote EBP. To expect all organizations and every nurse to conduct research is unrealistic. However, use of research in EBP provides the opportunity for research utilization by all.

Responsibility for Using Research

At this point, you may be asking yourself, "With all the existing obstacles to research, why do research at all?" Few would argue with the premise that having evidence to improve patient outcomes is desired. As Brockopp and Hastings-Tolsma (2003) said, "Professional nurses have the responsibility to participate in the promotion of evidence-based practice. Such expectations are both societal and professional" (p. 459). A more informed consumer demands high-quality care. With more accessibility to health care information, today's consumer expects nurses to use the most current data available to provide quality care. To do that, nurses must continuously explore new evidence and incorporate that evidence into nursing practice. Carroll et al. (1997) suggested, "the possession of a body of knowledge from research is the hallmark of a profession" (p. 2 of 10). Fain (1999) said, "Nurses are responsible for assuming an active role in developing a body of knowledge" (p. 11). As a relatively new profession, nursing has the responsibility to provide 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.

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

Importance of Generating Evidence

Discovering Significant Evidence

As has been stated earlier, practicing 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 didn't use research for making decisions about nursing care (Polit & Beck, 2006).

Lack of innovation and 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. Consequently, generating and using scientific evidence can only improve the image of nursing and also provide better outcomes from the ensuing nursing care.

Another emphasis on the need for generating evidence and incorporation into practice is the cost of health care. Those costs are spiraling at an uncontrollable level that demands that nurses perform in the most cost-effective way. In fact, the nursing profession cannot afford to ignore innovative approaches in nursing care that will reduce costs while improving outcomes at the same time.

Impact on Practice

The impact of using research in evidence-based nursing practice is enormous. No longer can nurses rely on "how they were 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 this 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.

Nurses must step up to the plate and ask pointed, directed questions about the nursing care and health care that is being provided. The status quo is not acceptable at this time. Nurses are taking the lead in querying the health care delivery venue as to the appropriateness of the care being provided. Evidence-based nursing practice requires that each nurse develop this inquiring mind to ensure that the resulting patient outcomes are of high quality and appropriate in the current health care arena.

Nursing is truly an art and a science. EBP not only provides elements of both but also contributes to the profession's development. As a result, EBP improves everyday practice by providing empirical data to guide nursing interventions.

Summary Points

1. A core body of nursing knowledge is derived from a process for research incorporated into practice and has been called best practice, quality of care, and evidence-based.
2. A working definition of evidence-based practice (EBP) is: EBP is a research-based, decision-making process utilized to guide the delivery of holistic patient care by nurses.
3. The PICOT acronym provides a mechanism for posing forceful, clinical questions to generate scientific questions.
4. Obstacles for research utilization can be categorized as being in the areas of education, beliefs/attitudes, and support/resources.
5. Generating evidence adds to the core of nursing knowledge, which promotes nursing as a profession.
6. The combination of nursing practice and research is essential to EBP.

RED FLAGS

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 tests 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 *no no's* within research but are concerns that need to be considered. Within the documentation, the 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 the justification for the research decisions, a study with 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 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 a concern. These areas are not items that should not be done but are items that should be supported by sound, clear rationales as to why the researcher used the research components.

Suggested Readings

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Multiple Choice Questions

Question 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

Question 2: Within the process of providing evidence-based nursing care, what 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

Question 3: As a novice nurse on a medical-surgical hospital unit, you do not 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, what aspects 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

Question 4: Which of the evidence-based practice (EBP) components holds the greatest weight in determining the management of the clinical situation?

A. Thought process
B. Client preferences
C. Research
D. The situation

Question 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. Heresy data and practice guidelines

Question 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

Question 7: The 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?" What 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

Question 8: Research utilization has often been

A. Neglected in the literature
B. Denied by publishers
C. Reported in the literature
D. Spurned by EBP

Question 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

Question 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. What 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

Question 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

Question 12: You were 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

Question 13: 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

Question 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

Question 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"

Discussion Questions

Discussion Question 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 health care situation. You have been asked: How do others in this type of situation deal with the numerous stressful challenges? What type of searchable question could be developed to drive the data search related to this request?

Discussion Question 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?

Discussion Question 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 evidenced-based topic for development. The faculty members instruct you to select a topic that will be functional in your workplace. What types of activities would you carry out to aid in the selection of this topic?