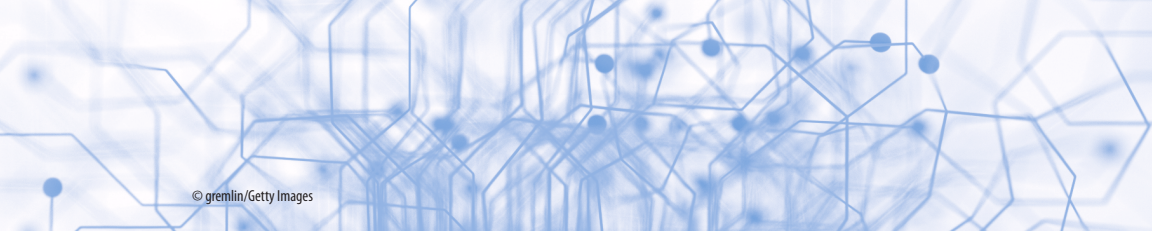

CHAPTER 1

Connection Between Research and Evidence-Based Practice

Carol Boswell and Sharon Cannon

CHAPTER OBJECTIVES

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

1. Translate the essentials for research to ratify evidence-based practice.
2. Define evidence-based practice.
3. Indicate impediments to evidence-based research.
4. Distinguish the nurse's role in evidence-based practice.
5. Interpret how evidence-based practice affects nursing practice.

KEY TERMS

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

Introduction

The overarching principle for healthcare practice is the provision of quality nursing care to all clients without consideration of social, financial, cultural, 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. (Although the healthcare field defines "client" and "patient" differently, for the purposes of this text, these terms are used interchangeably.) 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 male, a young child, or a critically ill adult female must come to the nursing practice arena with more than the latest information. The majority of the information must be tested and confirmed. To see how this works, let's consider the idea of cardiac information, although any disease process could be utilized for this purpose. Within nursing practice, certain health information concerning the management of cardiac complications, such as a myocardial infarction, 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 an unsure response by the nurse. Too often, the healthcare provider delivers the care because it is the known process or because it has been ordered instead of providing care based on the evidence found within the profession. Yoder and colleagues (2014) found that "staff nurses perceive finding and using research evidence as an esoteric activity that lies beyond their immediate responsibilities" (p. 35). However, the informational basis for each aspect of the nursing care to be provided should be analyzed to determine its sources and the strength of the information. Does the information come from general usage, or is it information that has been established through research or other critical analyses 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 client situation depends on the specifics of the client's needs, the client's expectations concerning health, and many other aspects requiring modification of the confirmed knowledge application. The foundation of nursing care delivery must be research tested, research confirmed, and/or analytically investigated knowledge tempered by an awareness of the unique characteristics of the client and the situation.

The process of EBP includes assessing and delineating a problem through communication of an identifiable problem, pursuing and appraising the obtainable details, implementing a practice intervention as a product of the evidence, and evaluating the accomplished process for effectiveness. Initially, EBP requires the identification of the practice problem, followed by the utilization of tested research and other evidential results to improve the care provided to the clients. According to Conner (2014), the essential assessment questions are interchangeable—whether the clinical question involves treatment, diagnosis, outcomes, or causation:

- Are the conclusions of the study compelling and expected?
- Which outcomes were understood?
- Will the results smooth the progress toward the management of the patient's care?

The requirement to integrate sustained practices into the delivery of health care that cultivated the opportunities and development of EBP in the current healthcare arena is paramount. Bucknall (2012) notes that cognitive approaches, intuition, and analysis of information play key roles in how evidence is acknowledged, evaluated, and incorporated into the clinical decision-making process that affects 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 EBP, quality improvement (QI), and research utilization.

The purpose of QI is to furnish a methodical, data-driven project concerning attitudes to enrich procedures and/or outcomes (Conner, 2014). The idea of QI is directed toward the improvement of patient outcomes. QI does tend to be site specific, which is one of the key aspects where it differs from research. The goal of the results obtained from a QI project is not to have information that is generalizable to another site, nor is it to set up the results as best practices. However, when multiple sites discover the same outcomes from consistent QI projects, the data then move toward best practices.

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.

Malloch and Porter-O'Grady (2015) 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 evidence. According to Melnyk and Fineout-Overholt (2015), healthcare providers must be able to locate, analyze, evaluate, and use the significant evidence to ensure that patients are certain and convinced that their providers are basing care on evidence for optimal outcomes. This assurance that the care being provided is confirmed from a tested research/evidence foundation inspires patient confidence in the 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 be sure 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 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). Catalano (2015) suggests that the ACA will result in nursing responding to societal needs with increased attention while still maintaining the previous nursing focus. The ACA has a primary focus on affordable, accessible care with an emphasis on supporting research

effecting safe, quality patient care. According to Young, Bakewell-Sachs, and Sarna (2017), the ACA "drove changes in care around readmissions and hospital-acquired conditions, and introduced payment models that fostered innovation in care models that emphasize population health- and community-based and primary care" (p. 263). Nurses are being asked to step into the lead roles for community health, along with preventive health management. While the implementation of the ACA is ever changing, the current direction for nursing seems to be toward preventive healthcare management. As a result, nurses are being called on to consider and implement best practices in outpatient settings with increasing regularity. Another area that has been affected by the ACA relates to funding issues. According to Logsdon and colleagues (2017), "the economic downturn, in conjunction with CMS (Center for Medicare and Medicaid Services) changes, has negatively impacted hospital budgets" (p. 273). Value-based purchasing is the current trend related to the funding of healthcare activities. Each and every intervention is carefully scrutinized for functionality and effectiveness. As institutions are working to implement value-based purchasing concerns, 30-day readmissions, and healthcare-associated infections, the changes influence the care provided by nurses. Along with value-based purchasing, the thrust has moved to value-based care affected by value-based nursing. The Health Resources and Services Administration (HRSA, 2014) confirms this perception by stating that within the new models of health care, innovative roles for nurses with new opportunities for advancement will be realized. As nurses provide patient-centered care, nurses will increasingly find themselves actively engaged in EBP and research projects. According to Welton and Harper (2016), "the cost of nursing care is difficult or impossible to measure on a per patient basis" (p. 7) in terms of dollar values. With the focus on the electronic medical record (EMR), the expectation for innovative methods for assessing the actual impact of individual nurses on best practices and quality care is being strongly investigated. Nurses must embrace the idea of best practices and quality care that is founded on EBP to reflect the value and functionality of nursing within the healthcare arena.

The second development in 2010 came from the Carnegie Foundation recommendation in a 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. For the educational community, attention must be given to ensuring that nurses coming out of nursing programs understand and incorporate EBP into the essence of the practice of providing holistic nursing 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 support for interdisciplinary nursing projects so research can involve the development of models of care and solutions to improve health and health care. Stavor, Zedreck-Gonzalez, and Hoffmann (2017) stressed that the IOM established the expectation that 90% of all clinical decisions would be based on accurate, suitable, and state-of-the-art evidence by the year 2020. They identified eight research priorities for nursing practice and nursing education. The priorities for research included areas such as delivery models, reimbursement, care trends, nurse residencies, and funding for nurses' training. Herlehy (2011) authenticates the ideas set forth by the report to "underscore nurses' unique contributions and capacity to enhance the quality of care through practice, education, and leadership" (p. 519). Nursing brings to the table aptitudes and competences that reinforce and

advocate for safe and quality health care for all generations and cultures. The incorporation of EBP, research, and QI provides the fortification and reinforcement of the evidence needed to provide effective and efficient health care in multiple settings. Welton and Harper (2016) champion the idea that the costing of nursing is difficult on a per-patient basis due to the challenge of measuring quality. This process of identifying means to showcase the quality efforts of nursing on a per-patient basis is imperative to advancing the profession of nursing within the current healthcare arena.

These three new developments (ACA, the Carnegie Foundation recommendation, and the IOM report) require nurses to examine their knowledge; skills; and, most important, their values about EBP and research. Each of these three developments has provided further clarification of the expectations for safe, effective care to every individual encountering healthcare issues. Looking at how to best address the burdensome aspects of health care through effective utilization of key providers allows for the successful management of health challenges.

THINK OUTSIDE THE BOX

Consider the following four routine activities done by nurses during a typical clinical day: bowel sounds, turning every 2 hours, nothing by mouth for 8 hours prior to surgery, and normal oral temperature levels. Carefully consider what evidence was used in your institution as the foundation for these tasks. Are the skills for the tasks in your practice setting based on research, personal preferences, clinical guidelines, or traditions?

The practicing nurse has to value the ideas of the EBP process, research, and QI to facilitate its complete incorporation and implementation. Nurses must understand the value of integrating carefully analyzed results from research, QI, and other sources with personal experiences and client values when determining the treatment plan that best addresses a situation's identified challenges. Even when healthcare providers utilize the most advantageous evidence accessible, each engagement with an individual continues to be distinctive. The treatments and outcomes will change based on the uniqueness of the client's values, preferences, interests, and/or diagnoses. According to Fonteyn (2005), nurses who are involved with EBP tend to demonstrate increased critical thinking skills along with implementation of research outcomes. Saunders and Vehviläinen-Julkunen (2016) ascertained that "nurses worldwide state they are familiar with, have positive attitudes toward, and believe in the value of EBP in improving care quality and patient outcomes, nurses perceive their own EBP knowledge and skills insufficient for employing EBP, and do not use best evidence in practice" (p. 129). 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 and other tested data while including 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. The evolution of EBP has moved the focus of client-centered care to the forefront of nursing care.

Fineout-Overholt and Melnyk (2005) state that continuous opportunities for learning EBP must be given to providers to enhance and sharpen EBP skills for

posing searchable, answerable questions, locating the optimal evidence that can be accessed, while competently and proficiently evaluating research and evidence reports for establishing significant evidence vital for encouraging an evidence-based environment in which to practice. 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. A competent nurse uses each healthcare encounter to augment and strengthen his or her knowledge base.

Mick (2017) maintained that, on a consistent basis, nurses are obligated to identify questions and challenges related to patient needs and quality practice issues so that appropriate interventions can be recognized and addressed. 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. Bator, Taylor, and Catalano (2015) propose that nursing research is essential. Nurses educated at all levels must use research and EBP to improve the care of patients. According to Mick (2017), healthcare instructions, ritual and tradition, and personal choice must be used by the nurse to determine the optimal best practices to use with various patient and management encounters during the performance of nursing care. We all know that individuals rise to the level to which we expect them to rise: If we set low expectations, they will rise to meet the expected level of performance. If we establish challenging expectations, they will strive to attain them. Nurses seem to manage the nursing care provided without directly acknowledging the underlying foundation. This process or intuition grows as the nurse gains experience and expertise (Benner et al., 2010). Intuitive management of health care is an example of working at an expert level, but nurses do need to investigate regularly the foundations they are using to make the decisions regarding quality health care.

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 on which to build a practice of care that is centered on tested solutions. Research is a scientific process using fundamental expertise to clarify and visualize key aspects as it enhances a discipline's ability to anticipate outcomes. 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 and QI. This underpinning allows for the safe and effective provision of quality health care. According to Melnyk and Fineout-Overholt (2015), the publishing of research and other evidence along with the translation into practice to advance patient care takes too long and is a source of anxiety in healthcare organizations and federal agencies. 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 (decision-making process), client preferences (holistic patient care), research (nursing confirmation), and nursing expertise—is included in the EBP definition used in this text (**FIGURE 1-1**). Although all of these aspects are required, the actual situation directs the weighting of the

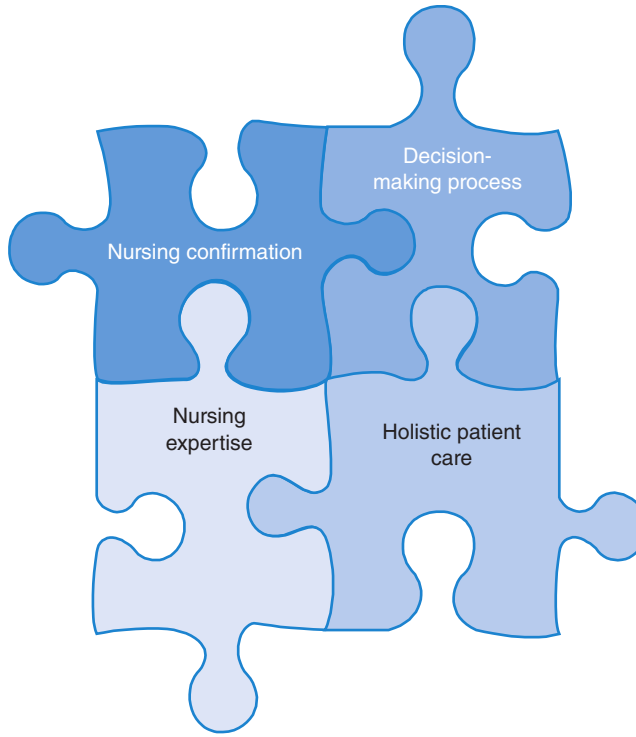

FIGURE 1-1 Evidence-based practice representation.

aspects because each situation is unique. A reliable consideration of the distinctive characteristics—evidence, patient values, and clinician's expertise—included in EBP requires a decision-making process to address each situation. In this text, 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, ethical considerations, 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

Benefiting from research evidence in conjunction with other types of evidence in the practice arena is a multifaceted process that entails altering provider performance. This process is challenging even when the comparative rewards are compelling and robust. The nurse is essential 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) address

the care needs of the client appropriately, (2) not fit the current accepted provision of care, or (3) be better addressed via some other method of care. According to Laskowski-Jones (2015), "if nurses don't read and evaluate whether or not research findings have relevance to this work, they run the risk of practicing in a way that's either ineffective or possibly even deleterious to patient care" (p. 6). 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 nurses 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, evidence-tested 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.

According to Mick (2017), "evidence has shown that up to 2 decades (20 years) may pass before the findings of original research become part of routine clinical practice" (p. 33). 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."

Ryan and colleagues (2017) ventured that excellence in nursing care is based on nurses' attitudes; values; behavior; and associations with patients, peers, and administrators resulting in improved health outcomes. 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.

Outcomes research is a growing expectation within health care. The specification of quality health procedures involves individuals striving to distinguish and acknowledge the outcomes from identifiable and distinctive healthcare patterns and interventions (Agency for Healthcare Research and Quality, 2000). Outcomes research is viewed as a mechanism for determining which quality care is possible and how to get to that point of significance and usefulness 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 relevant 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). Through the use of concepts such as implementation science,

research (conducting of research), **research utilization** (application of research), QI, and EBP are coming together for the improvement of healthcare delivery. As nurses develop confidence in investigating the diverse routines, interventions, and obstacles within the provision of quality care, advanced and tested systems of healthcare delivery will become progressively more obtainable and acknowledged. 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. An essential skill required for authentic EBP is the capability of professionals to analyze methodically each type of result and evidence to justify the best data to utilize in the provision of holistic health care on a daily basis. Without this foundation, which enables them to examine the evidence methodically, nurses are left to vacillate among varying interpretations of healthcare information. As mentioned earlier, the ACA and the 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 being utilized with research? How can nurses' expertise be integrated productively into sensible nursing care management?

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 considered carefully and thoroughly 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 (2015) 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. 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" (Melnyk, 2004, 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 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.

Gray, Grove, and Sutherland (2017) 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. 18). 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.

While definitions from other disciplines can be helpful, nursing needs to take the components presented and apply the concepts to the practice of nursing care. As can be seen, each of these definitions includes a decision-making process with the

TABLE 1-1 Comparison of Qualities Included in Evidence-Based Practice Definitions

Author (Year)	Quality of Care	Multi-Faceted	Decision-Making Process
Newhouse, Dearholt, Poe, Pugh, and White (2007)			X
Melnyk and Fineout-Overholt (2015)	X	X	
Melnyk (2004)			X
Rutledge and Grant (2002)			X
Porter-O'Grady (2006)			
Gray, Grove, and Sutherland (2017)	X		
Magee (2005)			X
Pravikoff, Tanner, and Pierce (2005)			X
Omery and Williams (1999)			X
DiCenso, Cullum, and Ciliska (1998)			X

use of evidence balanced by patient and provider interactions. Another definition that includes this balance submitted by Pravikoff and colleagues (2005) for EBP is "a systematic approach to problem solving for healthcare providers, including registered nurses (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. 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.

As early as 1998, 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

	Clinical Focus	Foundation of Practice	Client Involvement	Other Aspects
	X		X	
	X	Evidence, expertise, assessment	X	
	X	Evidence, expertise, pathophysiology, psychosocial		
	X	Evidence, expertise	X	
		Research	X	Cost
		Evidence	X	
	X	Evidence	X	
		Expertise		
	X	Evidence, proficiency	X	Assets

bibliographical databases or a QI department located within a healthcare agency. The evidence used within this process can include research, integrative reviews, practice guidelines, quality improvement data, "big data sets," 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 the following:

- Randomized, controlled trials
- Single randomized, controlled trials
- Controlled trials without randomization
- Quasi-experimental studies
- Nonexperimental studies
- Descriptive studies
- Expert consensus
- Quality improvement data
- Program evaluation data

Multiple formats of evidence are necessary and purposeful; the credibility of the evidence must be measured conscientiously when determining a plan of action. Each evidence design supplies information to incorporate into the decision-making process. The support for the information (evidence) is better in those designs that are based on research rather than 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) confirmed evidence from research, QI, or other sources; (3) nursing expertise; and (4) client involvement (holistic patient care) (see Figure 1-1). The evidence that can have an impact on the care provided to clients can come from either a personal direction or visual focus. According to Mick (2017), personal evidence takes on the aspects that the individual nurse brings to the process from unique experiences based on the interpersonal relationships occurring within the nursing process. The second focus of evidence can be seen as an aesthetic process that allows the nurse to incorporate intuition, interpretation, and values into the delivery of both the art and practice of nursing (Mick, 2017). Each of these facets of evidence plays a strong part in allowing the nurse and patient to develop an individualized process for managing the healthcare challenges. Thus, provision of care does not become a cookie-cutter type of health care but rather allows for the unique needs of the parties involved in the health environment

As EBP has evolved within the field of health care, the idea of what constitutes appropriate evidence has also matured (**FIGURE 1-2**).

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 assessed carefully in terms of the strength and applicability of the information to the unique client setting. Each agency and nurse must consider critically the results and evidence available concerning an identified healthcare problem.

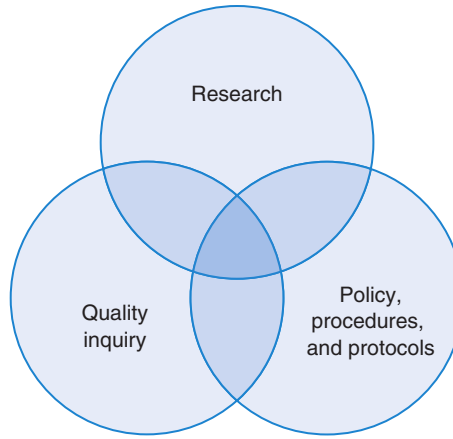

FIGURE 1-2 EBP evidence confirmation.

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 (2015) declared that a key aspect within the process is asking the "right" question. The clarification of the question focuses the search for valid evidence so that it speaks to the issue under examination. Developing a searchable question involves focusing on the key aspects to avert a complicated and time-consuming search that uncovers primarily unrelated resources. 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 "who," "what," "why," "when," "where," "how," and "how much" questions for 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 (2015) describe the two types of initial questions as background questions and foreground questions. Background questions address the core knowledge within the healthcare field. Conner (2014) calls this type of question a "knowledge-focused trigger" (p. 3). Knowledge comes from literature, new philosophies, or new regulations. 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. Background questions are viewed as broad searches that can frequently be answered by information obtained from textbooks (Echevarria & Walker, 2014). These questions generally begin with the word *what* or *when*. These types of questions serve as the underpinnings for other questions. 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 as they work to comprehend their healthcare challenges (Melnyk & Fineout-Overholt, 2015). This type of question can be classified as a "problem-focused trigger" (Conner, 2014, p. 3). The problems can come from an identified clinical problem, risk management, finances, or QI. Echevarria and Walker (2014) clarify that foreground questions are used to answer a precise and distinctive clinical issue. 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.

The use of the acronym **PICOT** is helpful in focusing the development of the foreground questions (**BOX 1-1**). The PICOT acronym has the following meaning (Melnyk & Fineout-Overholt, 2015):

P Patient population of interest

I Intervention of interest

C Comparison of interest

O Outcome of interest

T Time

THINK OUTSIDE THE BOX

Within every organization, obstacles affecting the incorporation of changes such as EBP exist. Examine your institution. Which obstacles do you see? What can you do to challenge and conquer these obstacles?

BOX 1-1 Examples of Searchable Questions for Research in EBP

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: Use of narcotic pain management
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: Readmission Rates

Due to value-based funding, acute care facilities are carefully considering ways to decrease the number of 30-day readmissions resulting from a wide variety of illnesses. One of those illnesses is congestive heart failure (CHF).

Preliminary Question: What follow-up activities can be used to affect 30-day readmission rates for patients being dismissed from the hospital with a diagnosis of CHF?

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

Population: Patients being discharged from a hospital following treatment for CHF symptoms

Intervention: Phone calls by registered nurses within 48 hours of discharge to check on transition to home care

Comparison: Mailing a reminder to complete all follow-up care

Outcome: Effective management of CHF symptoms from home along with decreased number of readmissions for CHF symptoms.

Time: Within 30 days from discharge

Revised Searchable Question: During the 30 days following discharge from the acute care setting, will patients who had a diagnosis of CHF have effective management of their CHF symptoms at home and decreased need for readmission for the same symptoms following the use of a phone call to discuss home care by registered nurses within 36 hours of discharge compared to receiving a mailed reminder of complete follow-up care expectations?

Example 3: Pediatrics

You work for the pediatric unit at the local hospital. The same children are readmitted for earaches, injuries, and respiratory diseases. You have been assigned to prepare and deliver parenting classes for young parents who have had their children 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. An additional concern that you have is the manner in which to provide the classes to meet the needs of the parents.

Preliminary Question: Which type of information must be included, and how should the parenting class be provided for parents?

Clarification of Question: Although the population has been somewhat specified, additional clarification is needed. Another limitation within the preliminary question is 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 recurring health problems

Intervention: Online parenting classes addressing symptoms that need to be reported to the healthcare provider

Comparison: Face-to-face parenting classes

Outcome: Reduction in the number of admissions for recurring health problems

Time: Not needed for this question

(continues)

BOX 1-1 Examples of Searchable Questions for Research in EBP *(continued)*

Revised Searchable Question: Do online parenting classes compared to face-to-face classes improve the knowledge level for parents who have had children admitted to the hospital for recurring health problems and reduce the number of readmissions for the same disease process?

Example 4: Cancer-Related Illness

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: Which type of routine screening examinations should be performed for middle-aged adults 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 aspects of a PICOT question. Here is the PICOT analysis:

Population: Individuals with a family history of cancer
Intervention: Scheduling of aggressive cancer screening examinations
Comparison: Scheduling of routine cancer screening examinations
Outcome: Early diagnosis of cancer
Time: Not needed for this question

Revised Searchable Question: For individuals with a family history of cancer, what effect does aggressive versus routine cancer screening examinations have on the early diagnosis of cancer?

Example 5: Staffing

As a new nurse manager on a medical–surgical unit in a large acute care setting, the unit has had a turnover rate of 25% during the last 6 months. The patient satisfaction scores do not reflect good nursing care being provided. The unit is staffed with four BSN-prepared nurses, four AD-prepared nurses, three LVNs, and eight CNAs.

Preliminary Question: What type of nursing shift timing should be used to improve the staff retention on this unit?

Clarification of Question: The question does not adequately define the population or the intervention for addressing the concerns. It is voiced more as a global type of question. The PICOT analysis could be:

Population: Full-time nursing staff employees
Intervention: Use of 12-hour shifts with primary care model
Comparison: Use of 8-hour shift with team nursing care model
Outcome: Improved staff retention rate and improved patient satisfaction findings
Time: Not needed for this question

Revised Searchable Question: For full-time nursing staff employees, will the use of 12-hour shifts with a primary care nursing model improve the staff retention rate and patient satisfaction findings when compared to 8-hour shifts using a team nursing approach?

Note: AD = associate degree; BSN = bachelor of science in nursing; CNA = certified nursing assistant; LVN = licensed vocational nurse.

In considering the population (first component) within the question, thought is needed to determine specific information about the characteristics of the group under investigation. This description could relate to age, gender, diagnosis, medical unit, and/or ethnicity. The process needs to be specific enough to provide direction while not restricting the search too much. According to Dawes and colleagues (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 providing enough specificity to ensure that the search addresses the appropriate population while not excluding relevant information. As the PICOT is developed, care must be given to the purpose for the PICOT. The PICOT (thus each component) is used to help clarify the evidence that is being sought to address the triggers/problems identified.

The assertion of the intervention (second feature) for the question is a crucial aspect that requires thorough reflection and attention. This facet stipulates 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 facet of the query should seek to include the contact, treatment, patient insight, diagnostic test, and/or predictive aspect that is thought to produce the best outcome (Melnyk & Fineout-Overholt, 2015). Clarification of this portion within the questioning process diminishes the potential for having to backtrack later when the results are not as clearly delineated as anticipated.

The third part of the question formation—the comparison of interest—is an optional facet within the questioning process. The comparison is an alternative action that can be used for the identified populations to gain the outcome that is being sought. A comparison intervention is a secondary treatment, insight, test, or predictive aspect that can be used as an alternative process to reach the outcome being pursued for this population. A PICOT question does not need to state that a comparison is the lack of the identified intervention. The lack of the identified intervention is not a comparison intervention and may be unethical at times. The only time that a comparison of interest is used in the PICOT format is when a different intervention is available that could result in the same outcomes. Within this component, the comparison of different treatment options would be analyzed to reach the desired outcome as identified in the PICOT. 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 feature for consideration in PICOT questions is the outcome of interest. According to Schmidt and Brown (2019), it is extremely essential to deliberate this piece sensibly to ascertain correctly the outcome that is anticipated. Care must be given to the outcomes that are anticipated by using the identified intervention compared to the alternate "comparison" intervention. According to Ryan and colleagues (2017), outcomes tend to address the themes of processes, environment, and/or behaviors. The outcome should be those one or two results that are expected as a consequence of using the intervention treatment. Why is the intervention treatment better for obtaining the results than the other alternative treatments for the population?

The final part to consider is time. Timing for the outcome of interest is a principal characteristic to scrutinize. While time is not included in all PICOT questions, it is valuable for inclusion on the questions that can be affected directly 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. No single approach exists to ask a searchable question; thus, care must be given to clarifying the questions prior to moving forward to the investigation of the evidence. The PICOT format cultivates clarification of the heart of the area for investigation. The predominant rationale 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.

It is interesting that as EBP evolves, PICOT has also evolved. Initially, PICOT was restricted to the four facets of population, intervention, comparison, and outcome (PICO). As one searches for information about how to develop an EBP question, PICOT can be viewed as PICOTS, which adds *setting* to the questions, or as PICOT-SD, which incorporates the *study design* into the statement of the problem (Delfini Group, 2012). These modifications to the question format come from the field of medicine to provide directions for ensuring that the best question can be developed for driving the different types of inquiries. The majority of EBP questions tend to take the format of PICO because time and other aspects are not used consistently within the formation. The other aspects can be used to clarify and amplify the question when needed to allow for an improved acquisition of evidential documents to consider.

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 and colleagues (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. By using the PICOT format to determine the current level of evidence related to a topic, the transition to a research project becomes increasingly focused. The evidence found aids in the determination of the contemplation and essence of the research or quality improvement process. The body of knowledge will be advanced as the next steps in knowledge confirmation are taken by the research or quality improvement project being based on the evidence available to this point in time.

Research Utilization

In the past, 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 (**BOX 1-2**).

As a result of the promotion of the use of 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. Most healthcare organizations are attempting to incorporate EBP in their institutions. Unfortunately, obstacles to the use of EBP often focus primarily on research utilization and understanding EBP.

BOX 1-2 Suggested Resources to Support the Retrieval and Appraisal of Evidence

Agency for Healthcare Research and Quality (www.ahrq.gov)
Cochrane Database of Systematic Reviews (www.cochranelibrary.com/cochrane-database-of-systematic-reviews/index.html)
Institute of Medicine of the National Academies (holds the documents produced by the IOM related to patient safety; http://www.nationalacademies.org/hmd/)
Joanna Briggs Institute (www.joannabriggs.org)
The Joint Commission (http://jointcommission.org)
Medscape (integrated information and educational tools; www.medscape.com/nurseshome)
Morrisey, L. J., & DeBourgh, G. A. (2001). Finding evidence: Refining literature searching skills for the advance practice nurse. *AACN Clinical Issues, 12*(4), 560–577.
National Comprehensive Cancer Network (www.nccn.org)
National Guidelines Clearinghouse (www.guideline.gov)
National Library of Medicine (allows free searches of MEDLINE through PubMed; www.ncbi.nlm.nih.gov/pubmed)
Oncology Nursing Society (ONS)—"Putting Evidence into Practice (PEP)" section (www.ons.org/practice-resources/pep)
Registered Nurses' Association of Ontario (RNAO), Nursing Best Practice Guidelines (http://rnao.ca/bpg)
Sarah Cole Hirsh Institute for Best Nursing Practices Based on Evidence (https://nursing.case.edu/hirsh/)
School of Health and Related Research (ScHARR), University of Sheffield—Information Resources (www.shef.ac.uk/scharr/sections/ir)
Sigma Theta Tau Virginia Henderson Library (www.nursinglibrary.org/vhl/)
University of Alberta—Evidence-Based Medicine Tool Kit (www.ebm.med.ualberta.ca/ebm.html)
University of North Carolina at Chapel Hill Health Sciences Library, Nursing (http://guides.lib.unc.edu/nursing)

Note: Access verified December 8, 2017.

The Importance of Generating Evidence

Discovering Significant Evidence

As stated earlier, to practice nursing based on "how we are taught" assumes that no further need to produce evidence is acknowledged. That dangerous assumption was investigated as early as 1975, when Ketefian's (1975) study revealed that nurses did not use research for making decisions about nursing care (Polit & Beck, 2008). Carter and associates (2017) confirm that "the timely and effective translation of research findings into practice and the organization of nurses' contributions to this process remain a challenge" (p. 266). Moving research and nursing contribution to evidence into the practice arena requires time and energy from the members of the profession. Nurses must embrace the idea that practice in every setting requires evidence to be successful. Carter and associates (2017) demand that clinical scholarship assimilate the nurses' dynamic involvement to advance patient care, enhance the

nursing profession, and generate new knowledge for health care. Embracing the idea of practice based on evidence is paramount for the advancement of the profession.

Lack of innovation and failure to develop a rationale for nursing care results in decreased respect for nursing as a profession. According to the American Nurses Association (ANA; 2016), 84% of Americans rated nurses as honest and ethical. Nurses have held the number one position of most trusted professions for 16 years in a row according to the Gallup poll (Brenan, 2017). 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 (2012) notes, a thorough assessment of the relevancy of the facts along with the anticipated contributions to a particular conclusion is needed for materials to move from simply being facts to serving as evidence. 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 Gallup poll surveys (ANA, 2016) indicate, patients 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–check–act (PDCA) cycle. These continuous improvement processes are being driven by the IOM's (2003) "Health Profession Education: A Bridge to Quality," 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 [IOM] report 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; readmission criteria; EMRs; and the Triple Aim/Quadruple Aim in Healthcare. The

Triple Aim has a fundamental purpose of improving the health of the population through the process of refining patient experiences and reducing healthcare costs (Bodenheimer & Sinsky, 2014). CipherHealth (2017) articulated the fourth aim, which addresses the importance of staff satisfaction. According to CipherHealth (2017), "working towards quadruple aim goals can help hospitals see financial and organization improvement from enhanced staff engagement, cost efficiencies, and higher levels of patient satisfaction" (para. 9). 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 core areas and national imperatives to change and transform care provided by nurses and healthcare providers.

Nurses must ask targeted, concise questions about the nursing care that is being provided. Rolston-Blenman (2009) suggests that success in embracing a culture of change and innovation entails recruiting nurses to advocate for the objectives, resulting in a culture that empowers them to conceive the tools they require for success on the frontline. Settling for the status quo is no longer acceptable. Instead, nurses must take the lead in querying the healthcare delivery venue in relation to the appropriateness and safety of the care being provided. Evidence-based nursing practice requires that each nurse develop an "inquiring mind" to ensure that the resulting patient outcomes are high quality, safe, cost effective, 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. Prompted by national developments, nurses need to collaborate with physicians and other healthcare providers to improve patient outcomes. Nurses should not work in silos but rather as crucial members of the healthcare team. Generating evidence for use by all professionals requires teamwork and collaboration because 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.

Obstacles to Using Research

Much of the literature discusses barriers to using research for the guidance of practice. Merriam-Webster (2017a) defines *barrier* as "an object that impedes the way." A barrier inhibits success. Perhaps another word better defines the challenge of utilization of research in nursing practice—**obstacle**. An obstacle is "something that impedes progress or achievement" (Merriam-Webster Dictionary, 2017b, para. 1). An obstacle can be conquered. As a result, the term *obstacle* will be used instead of *barrier* when talking about motivations for not employing research utilization in evidence-based nursing care.

The nurse must strive to recognize approaches to overcome each impediment to the path to success; thus, it becomes a challenge to rise above the obstacle 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 text, although it is useful to generate a general dialogue about the use of theories

within the research process. Nurses at the bedside do need to understand the connection between theory, research, and practice.

While it may seem easy to employ research in practice, it is essentially a complex problem. Three major categories of obstacles deter nurses from readily incorporating research into their practice—education, beliefs/attitudes, and support/resources. Mick (2017) confirms that strategic obstacles encountered by nurses when adopting the EBP and research processes as a component of their daily practice are the excessive burden of providing quality patient attention affected by restrictions resulting from existing time, resources, and organization. These aspects overwhelm nurses as they strive to incorporate scholarship into the work environment.

THINK OUTSIDE THE BOX

Discuss the integration of clinical proficiency in the implementation of evidence-based nursing care.

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 National Council of State Boards of Nursing (NCSBN; 2017) has found that in 2015, 65% of respondents to the NCSBN's survey signified that they had achieved a baccalaureate or higher degree. For the 2015 survey, 39% of the individuals stated that their initial nursing degree was the BSN compared to 36% during the 2013 survey (NCSBN, 2017). The NCSBN's executive summary states that the percentage of nurses from all educational levels working in acute care facilities is currently 54%, which reflects a decrease of nurses working in acute care settings by approximately 2% from prior surveys (NCSBN, 2017). Associate Degree in Nursing (ADN) and diploma programs usually do not focus on research. It is important that care be given to providing further education directed toward EBP and research. If nurses practice as they were taught, then nurses need additional knowledge about research. It is common to hear, "That's the way I was taught." Considering that the average age of nurses is 48.8 (NCSBN, 2017), the fallacy of that line of thinking becomes apparent; such a nurse may have been taught 20 to 25 years ago. Research may have seemed too "mystical" and to 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 curricula, many graduates continue to resist engaging in or exploring research. Learning research can be likened to learning a foreign language. Researchers continue to organize their conclusions in scientific and technological verbiage that is intricate and arduous to comprehend. A frequent misperception is only an academician at a state-of-the-art university can conduct research. The thought that research is feasible and beneficial when linked to clinical practice appears to be inadequately explained to novice nurses. Thus, it

is 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 concerning the use of research represent obstacles to incorporating EBP into nursing care. This negativity is true of both healthcare organizations and individual nurses. The administrators in each organization must acknowledge the value of research within their operations. If nurses feel supported and confident in their capability to employ research, they will willingly assimilate research findings into their practice.

Support/Resources

The third major category of obstacles to the incorporation of EBP is support and resource availability. With one of the focuses of the quadruple aims being cost, administrators list finances as a rationale for limiting or hindering the use of EBP and research. When a nursing shortage exists, staffing becomes a major issue. Allowing staff members adequate time to do the essential reading and analysis 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 and availability of research materials. Many organizations do not have a library, librarian, or personnel familiar with accessing current research findings. Agencies tend to provide access to web platforms to be used by the nurses when investigating different topics instead of using actual librarians. Nurses who lack computer skills may not know how to conduct online searches. 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 for obtaining evidence to enhance their practice. Even when a nurse has the requisite knowledge and skills 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 Health Insurance Portability and Accountability Act (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. Solutions to these problems must be found if nursing is to promote widespread use of EBP. According to Vratny and Shriver (2007), guidance, eagerness, mentorship, clinical investigation, and insightful practice are what really increase evidence-based practice and help it flourish. An aspect that intensifies thoughts about support relates to mentoring. Kelly, Turner, Speroni, McLaughlin, and Guzzetta (2013) found that empowering staff in the

components of inquisitive thinking allows for the development of the skills needed. Terms such as "culture of inquiry," "culture for excellence in nursing research," and "discipline thinking" are now being used and are viewed as a way to clarify and define the idea of mentoring and supporting individuals in a quest for evidence. The formalizing of programs showcases the support and resources available for individuals willing to make the journey. Yoder and colleagues (2014) support the idea of incorporating champions for both research utilization and EBP at all levels within an organization to ensure that EBP is embraced. The use of champions allows for the effective implementation of the concepts of EBP within the daily workings of the unit/agency.

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 current data to provide quality care. To do so, nurses must continuously explore new evidence and incorporate that evidence into nursing practice. Nurses must take an active role in developing a body of knowledge. 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 organizations globally are examining ways to better comprehend how to enhance the quality, effectiveness, and safety of the health care they deliver, which are the components of the Institute for Healthcare Improvement (IHI) Triple Aim. 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.

Summary Points

1. Current national legislation and reports continue to have an impact on the importance of EBP and research utilization.
2. A core body of nursing knowledge stems from the process in which research is incorporated into practice; this strategy has been called best practice, quality of care, and EBP.
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 offers a structure for rendering dynamic, clinical questions to construct scientific questions.
5. Obstacles to research utilization are education, beliefs/attitudes, support/resources, lack of time, and lack of mentoring.
6. Generating evidence augments the core of nursing knowledge, which advances nursing as a profession.
7. The combination of nursing practice and research is central to advancing EBP.
8. Safe, effective patient care is not an extravagance but rather an obligation.

RED FLAGS

- Within the documentation of a research project, specific decisions concerning the planning and implementation of the process must be defended by rationales. In EBP, randomized controlled trials are viewed as one of the most powerful types of evidence. As a result, some research characteristics are viewed as stronger designs (quantitative, experimental, and randomized sampling) than other facets of the process. In this text, the categorization of a red flag will reflect features of the research project that need to be examined carefully to determine the quality of the process employed. These areas are not strictly forbidden within research but rather are points that need to be taken into consideration. Within the documentation, these aspects should be corroborated by rationales reflecting the thought process utilized for those pieces.
- When an individual is appraising an article for inclusion in an EBP situation and/or policy and procedure rationale, the presence of red flags should be seen as a gateway to consider the justification for the decisions made by the research team. If the research team has provided sufficient justification for each of the research decisions, a study characterized by 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, implementation, and analysis processes. The researcher has the responsibility to document the validation 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 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. Which of these examples characterizes a successful application of safe and competent nursing care delivery?
   A. The nurse investigates the latest online information in deciding how the care is to be provided.
   B. The nurse examines peer-reviewed nursing research articles to determine the best care to be provided.
   C. The nurse asks a clinical instructor from the university how the care for a client should be given.
   D. The nurse provides care following the instructions provided when attending school.

2. The ACA and the 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.

3. A nurse is seeking a research article to use as the underpinning for an adjustment in the manner in which care is given. An example of a research article is a manuscript that provides a(n):
   A. overview of how to provide care.
   B. discussion of the method used for the research along with recommendations.
   C. discussion of a case study without any recommendations.
   D. overview of guidelines for a particular type of case.

4. Which of these forms of evidence carries the highest degree of credibility?
   A. Research study using a nonexperimental study
   B. Intuition
   C. Research study using a random control sample
   D. Research study providing a case study approach

5. A problem-focused trigger would generate which of the following PICOT statements?
   A. Registered nurses have less work stress than other healthcare providers.
   B. Adult cardiac patients involved in bedside rounding compared to multidisciplinary rounding have an increased understanding of their treatment plan.
   C. Palliative care patients enjoy music therapy more than pet therapy when provided by their family members.
   D. Registered nurses can use any nursing theorist to provide sound care.

6. Which of these PICOT questions or statements demonstrates effective development?
   A. What type of care is best used for pediatric patients?
   B. Nurses prefer 12-hour shifts to 8-hour shifts to allow more time with family.
   C. Individuals using saline for hep-lock flushes have fewer complications.

D. Hospitalized children have less stress and heal more quickly when allowed to use play therapy in comparison to pet therapy while recovering from surgery.

7. 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.

8. Research is often not valued because:
   A. it costs too much.
   B. administrators want it.
   C. search engines are easy to access.
   D. staffing is not an obstacle.

Discussion Questions

1. You are a public health nurse working in an outpatient community health facility. You are responsible for clients and their families in a six-county area. During the course of a week, you have from 6 to 10 clients or their families who experience stressful situations related to their diagnosis of diabetes mellitus type 1. These families and their loved ones experience confusion and frustration as they confront and deal with the complex 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 task force. 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

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