

# THE HISTORY OF EVIDENCE-BASED PRACTICE IN NURSING EDUCATION AND PRACTICE



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Beginning with Florence Nightingale in the 1800s and evolving again within the medical community, evidence-based practice continues to advance along with the nursing discipline. Evidence-based practice is foundational to undergraduate and graduate nursing education and is a way for the nursing discipline to minimize the theory to practice gap. This article discusses the concept of evidence-based practice from a historical perspective as it relates to nursing in the educational and practice domains. The concept evidence-based practice is defined, and the similarities and differences to evidence-based medicine are discussed. It is crucial that registered nurses be proactive in their quest for research knowledge, so the gap between theory and practice continues to close. Utilizing nursing best practice guidelines, reviewing and implementing applicable research evidence, and taking advantage of technological advances are all ways in which nursing can move forward as a well-informed discipline. (Index words: Evidence-based nursing; Education; Practice; Nursing history) *J Prof Nurs* 33:51–55, 2017. © 2016 Elsevier Inc. All rights reserved.

**E**VIDENCE-BASED PRACTICE evolved from Florence Nightingale in the 1800s to medical physicians' practice in the 1970s to the nursing profession in the late 1990s. It began as an idea to provide better outcomes for patients who experienced deplorable and unsanitary conditions and developed into a foundation that nursing has fostered and maintained in order to provide safe and competent care. According to the International Council of Nurses (International Council of Nurses, 2012), evidence-based practice is a way for the nursing discipline to minimize the theory to practice gap. It is also an important avenue for nursing educators to disseminate foundational knowledge to undergraduate and graduate nursing students. Enhancing undergraduate nursing students' capacity to comprehend and to apply evidence into their practice is "a fundamental university role" (Hickman, Kelly & Phillips, 2014, p. 598). This article discusses the concept of evidence-based practice from a historical perspective as it relates to nursing in the educational and practice domains. First,

this article will discuss evidence-based medicine and how this movement led to research utilization and evidence-based practice within nursing. The term *evidence-based practice* will be defined, and the similarities and differences to evidence-based medicine will be discussed. Finally, the authors will discuss the implications for the nursing discipline from the perspective of research, best practice guidelines, evidence-informed practice, and mobile technology.

## Evidence-Based Practice—An Emerging Concept

### Florence Nightingale and Evidence-Based Nursing

Although not extensively recognized in the literature, Florence Nightingale is considered by some nurse researchers (Kalisch & Kalisch, 1986; Lim, 2011; McDonald, 2001; Selanders and Crane, 2012; Sullivan-Marx, 2006) to have started the concept of improving patient outcomes through sound evidence. Florence Nightingale is widely known for her work in military hospitals during the Crimean War, which began in 1853 and lasted for 3 years (Lambert, 2011). After her experience in the Crimean war, Nightingale was asked to oversee the management of the barrack hospital in Scutari, Turkey, which was known for extremely unsanitary conditions (BBC History, n.d.). It was there that Nightingale critically examined how the environment influenced patient health and outcomes. In her book

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*Notes on Nursing*, first published in 1859, Nightingale (1970) speaks to the “steaming and rubbing of skin” (p. 53) and personal cleanliness when dealing with direct patient care. She writes, “Compare the dirtiness of the water in which you have washed when it is cold without soap, cold with soap, hot with soap. You will find the first has hardly removed any dirt at all, the second a little more, and the third a great deal more” (p. 53). The term *evidence-based practice* was not known then, but Nightingale was using evidence that had been determined through experimentation and critical examination to positively influence patient outcomes. Her book *Notes on Nursing* could be considered as best practice guidelines for nurses of the time.

Nightingale also utilized statistics in an attempt to understand and predict patient morbidity and mortality (Aravind & Chung, 2009; Nightingale, 1970). In *Notes on Nursing*, she writes, “In comparing the deaths of one hospital with those of another, any statistics are justly considered absolutely valueless which do not give the ages, the sexes and the diseases in all the cases” (p. 55). Nightingale goes on to discuss that doctors would often expect recoveries and treatments of patients to be similar in the cases of completely different patient demographics. Without a research body of knowledge to speak of at the time, Nightingale infused her nursing practice with evidence with the goal of enhancing patient health outcomes. She was a pioneer of evidence-based practice within the discipline of nursing.

### Evidence-Based Medicine

While Nightingale developed a small following in the literature that maintains her work within military hospitals was indicative of evidence-based practice, the majority of the literature traces the inception of evidence-based practice, originally known as *evidence-based medicine*, back to Cochrane in the 1970s (Brady & Lewin, 2007; French, 1999; Hulme, 2010). Before and during this time, much of the decision-making surrounding patient care was based on individual physician assessment and choice; it was believed that “each physician thought the right thoughts and did the right things” (Eddy, 2005, p. 9). Randomized controlled trials and other bodies of research began to develop, and it was discovered that the decisions made by physicians were often based on unfounded assumptions and that there was a wide variety of practices being used among physicians for similar patient illnesses (Eddy). While the term *evidence-based medicine* was not coined until 1992, Cochrane believed that limited resources would always be an issue within the health care system, and clinicians should strive to utilize only those procedures that had been proven to be the most effective (Cochrane Collection, 2013). Cochrane contended that randomized controlled trials provided the most reliable form of evidence, and his promotion of randomized controlled trials provided a foundation of health care decision-making that evolved into the evidence-based medicine movement (Aravind & Chung, 2009). This movement allowed clinicians a common approach for decisions about clinical practice.

In the early 1990s, the term *evidence-based medicine* was finally coined in the literature and clearly defined by

David Sackett, a definition that remains the most widely used among the literature even today (Aravind & Chung, 2009; Beyea & Slattery, 2013; French, 1999). Sackett, Rosenberg, Muir, Haynes, and Richardson (1996) defined the phrase as “the conscientious, explicit and judicious use of current best evidence in making decisions about the care of individual patients” (p. 71). To utilize evidence-based medicine to its fullest, Sackett et al. recommended that clinicians formulate a diagnosis based on evidence and research and then incorporate individual patient preference, values, and beliefs into that process (1996). While Cochrane in the 1970s focused the concept of evidence-based medicine on the value of randomized controlled trials, Sackett's definition of *evidence-based medicine* required a higher level of critical thinking. Sackett et al. placed a larger focus on utilizing patient values in order to implement valid research evidence on patient safety and patient-centered care. The definition of *evidence-based medicine* was then taken and renamed as *evidence-based practice* because other professions, specifically health care, adopted it for their own use.

### Evidence-Based Practice Within the Nursing Discipline

The definition of *evidence-based practice* within the nursing profession has evolved from being strictly clinically based to incorporate a more holistic approach that appropriately reflects the entirety of nursing research and practice. It is not only apparent within clinical practice adoption but it can also be utilized within undergraduate and graduate nursing education and theory development (Stevens, 2013). According to the International Council of Nurses, *evidence-based practice in nursing* 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 values within a context of caring” (2012, p. 6). Similarly, the Canadian Nurses Association's (2002) position is that evidence-based practice is based on decision-making and is used to optimize patient outcomes, improve clinical practice, and ensure accountability in nursing. In an evidence-based practice project in Hong Kong, French (1999) recruited a number of registered nurses (RNs) with experience in evidence-based practice application and discussed three vignettes that aided in his reworking of the definition of *evidence-based practice*. One of the more striking features discussed by French is the utilization of tacit knowledge in the implementation of evidence-based practice. Tacit knowledge, according to French, is knowledge that is not in the literature but is well known to the nursing profession and utilized successfully in practice. French's definition of *evidence-based practice* was broadened to “[a focus] on the integration of available evidence and the tacit knowledge of the investigator” (p. 72). While this definition lacks specificity and detail, the concept of tacit knowledge encourages RNs to incorporate previous research and experience based on contextual factors into their practice. Other definitions used to define *evidence-based practice* stem from Sackett's definition in the 1990s (Beyea & Slattery, 2013).

### Research Utilization Versus Evidence-Based Practice

Many models have been shaped from evidence-based medicine to aid in the understanding of how this concept could be applied to other health professions (Hulme, 2010). Specifically, for nursing, one of the ways in which evidence-based practice was first conceptualized was through research utilization (Hulme). While evidence-based practice includes a patient-centered approach (Rycroft-Malone et al., 2004), research utilization is simply the rigorous use of the research steps to critically appraise research evidence and implement that evidence into practice (Beyea & Slattery, 2013). Research utilization is a categorical process that does not include some of the holistic qualities that are inherent within nursing, for example, French's tacit, experiential knowledge. This process has a place in the development of a nursing knowledge base, however, it is important to understand how evidence-based practice influences patient care and minimizes the theory to practice gap within nursing. Evidence-based nursing is a broad concept that aims to improve patient safety, reduce health care costs and, ultimately, provide a framework that supports decision making in patient-specific situations (Beyea & Slattery, 2013). Beyea and Slattery argue that research utilization can tend to focus on the implementation of exceptionally reliable research studies before determining their merit or value in a clinical practice area (2013). This avenue is a cause for concern, as priorities such as patient safety, the importance of patient preferences, and values have the potential to become lost to what is believed to be the best evidence.

### Best Practice Guidelines

In the 21st century, one way in which nursing relies on evidence-based practice to enhance patient outcomes and patient care is the use of best practice guidelines. Many nursing organizations have taken the initiative and created various best practice guidelines as a way for RNs to more readily utilize the principles of evidence-based practice in patient care decision-making. In Canada, the Registered Nurses Association of Ontario has taken the lead in creating and distributing over 50 best practice guidelines on various patient care topics such as pain management, end-of-life care, and collaboration among RNs. According to the *Canadian Nurses Association* (2010), best practice guidelines are based on the most rigorous research available, such as systematic reviews and randomized controlled trials, but it also includes research "grounded in expert opinion and consensus" (para. 5). This comprehensive guideline links the original ideas behind evidence-based medicine with the key foundational perspectives that make nursing a caring profession. Best practice guidelines can expand nursing knowledge and research, while simultaneously ensuring advocacy and evidence-based patient care.

It has been argued in the literature that because evidence-based practice is rooted in the medicalization of patient care, it has the potential to be neglectful of the

other aspects necessary for the holistic care that is provided by the nursing profession (French, 1999; Mantzoukas, 2007; Melnyk et al., 2004). French (1999) contends that evidence-based practice, as it has evolved from evidence-based medicine, has its limitations in its application to nursing and other health care professions. He argues that evidence-based practice relies too heavily on the positivist perspective and that the findings from clinical trials often supersede other, equally-as-relevant aspects of nursing research. *International Council of Nurses* (2012) and *Canadian Nurses Association* (2002), among others, agree that first and foremost, the most reliable form of evidence is the systematic review, followed by the randomized controlled trial. However, the *International Council of Nurses* and *Canadian Nurses Association* (CNA) are also very clear in that the individual nurse's opinion and experience and patient preference and values are just as relevant in forming these guidelines. The research base of the nursing profession began as a theoretical foundation. Such theories as *Carper's* (1978) fundamental patterns of knowing have permeated the literature as a way of conceptualizing the nursing profession and also as a means of guiding practice in all nursing domains. Qualities that are inherent in RNs, such as compassion, keen perception, and the knowledge gained through learned experience, cannot always be quantified but also require a place among best practice guidelines as a means to improve patient outcomes. It is important, however, to recognize that evidence-based practice cannot exist with just one piece of research evidence. Nursing experience and legitimate research evidence should continue to work together to inform evidence-based practice.

### Evidence-Based Practice and Technology

One aspect of providing safe and evidence-based patient care is being able to access large amounts of information via mobile technologies (Doran et al., 2010). The utilization of these technologies is taught by nursing educators in an effort to prepare nursing students for evidence-based thinking in the clinical area (Raman, 2015). Barriers to the use of evidence-based practice in the clinical area, by RNs and students alike, are lack of wireless access and a lack of knowledge regarding relevant and current research findings (Doran et al.). Through the use of mobile technologies, current research can be brought directly to the point of care. In addition to overcoming the obstacle of accessibility, mobile technology can also enhance the relevance of this knowledge. A study completed by *Doran et al.* (2010) evaluated the use of mobile technologies such as personal digital assistants and the impact on the support and utilization of evidence-based practice by nursing staff. Doran et al. discovered that when given the necessary tools (i.e., smartphones), nurses were more likely to access resources related to drug and medical information and best practice guidelines.

The use of mobile technologies enhances the accessibility of evidence-based practice resources. This is

especially critical with new nurses and nursing students practicing foundational skills. The [Registered Nurses' Association of Ontario \(n.d.\)](#) supports on-line access to best practice guidelines implementation toolkits that provide guidance at both an organizational and individual level. In addition, Registered Nurses Association of Ontario provides a smartphone app that allows for quick access to a searchable, on-line best practice guidelines literature database. In the case where a nurse does not feel qualified to access these technological resources, a highly feasible strategy from the [Canadian Nurses Association \(CNA\) includes an evidence-based practice mentorship program \(n.d.\)](#). The American Association of Colleges of Nursing also provides a variety of support for bachelor of science in nursing-prepared RNs with regard to nursing research, nursing education, and evidence-based practice. The document *Evidence-Based Practice* supports RNs with step-by-step guidelines to implementing evidence-based practice but also provides strategies that can be used in practice settings ([American Association of Colleges of Nursing, 2013](#)). With programs and supports such as these, RNs can be educated and mentored in using technologies that provide research evidence that support their practice.

### Implications for the Nursing Profession

It is imperative that RNs be proactive in their quest for research knowledge so that the gap between theory and practice continues to close. A study by [Stokke, Olsen, Espehaug, and Nortvedt \(2015\)](#) explored the positive feelings and practice of evidence-based practice with 356 nurses. They found that the majority of nurses believe using evidence-based practice contributes to more positive outcomes for patients; however, many also said that they did not use evidence consistently and were not confident about how it should be implemented in practice. According to the [International Council of Nurses \(2012\)](#), the use of evidence-based practice challenges the current approach to nursing practice and patient care and, in doing so, holds RNs accountable for that practice. At the heart of nursing is patient-centered care, patient safety, and improved patient outcomes. With this in mind, RNs should strive to understand the broader concept that is evidence-based practice and work within their organization and educational institution to ensure that the most complete and sound evidence is being used and that the guidelines being implemented encompass all aspects of nursing care.

### Conclusion

Evidence-based practice is rooted in the premise that patient care should be informed by sound evidence. Nursing professionals utilize and synthesize the best evidence in order to inform their clinical practice and decision-making. According to the CNA, "decision-making in nursing practice is influenced by evidence and also by individual values, client choice, theories, clinical judgment, ethics, legislation and practice environments" (2002, p.1). Beginning with Florence Nightingale in the

1800s and evolving from within the medical community in the 1970s, evidence-based practice continues to advance and change along with the nursing discipline. Utilizing nursing best practice guidelines, reviewing and implementing applicable research evidence, and taking advantage of technological advances are all ways in which nursing can move forward as a well-informed discipline.

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