PERCEPTION OF BARRIERS TO EVIDENCE BASED PRACTICE AMONG CRITICAL CARE NURSES

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A project submitted in partial fulfillment of the requirements for the degree of:

MASTER OF NURSING

WASHINGTON STATE UNIVERSITY

College of Nursing

MAY 2011
To the Faculty of Washington State University:

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PERCEPTION OF BARRIERS TO EVIDENCE BASED PRACTICE AMONG CRITICAL CARE NURSES

Abstract

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Evidence-based practice is the use of the best research evidence, clinical judgment and patient preference to answer clinical questions. Research supports better outcomes for patients when practitioners adopt evidence-based practice (EBP), yet many barriers remain to the widespread use within nursing. This includes nursing practice in critical care units, which continues to fall short of utilizing EBP for state-of-the-science care. A review of the literature identified that critical care nurses’ perceived barriers to evidence-based practice are time constraints, a knowledge deficit, and organizational culture. Knowles theory of adult learners helps educators understand these barriers and develop more effective educational campaigns to change practice. These include educating to real-life problems with applicable clinical questions, and facilitating learner driven knowledge building. Implications for future research include assessing the efficacy of educational campaigns to promote EBP that utilize Knowles theory of the adult learner.

Key words: Evidence-based practice, critical care, barriers, perception, Knowles, adult learner
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Journal identification page: Journal of Continuing Education in Nursing

Dedication
Perception of Barriers to Evidence-Based Practice among Critical Care Nurses

Evidence-based practice (EBP) is the conscientious use of current best evidence in making decisions about patient care (Sackett, Straus, Richardson, Rosenberg, & Haynes, 2000). EBP extends further than research utilization, which is typically the use of the results of a single research study. It is the integration of the best available research with clinical expertise and patient preference to make clinical decisions (Barnsteiner & Prevost, 2002). Patients’ outcomes have been shown to be 28% better when clinical care is based on evidence rather than tradition or common sense (Heater, Becker, & Olsen, 1988; Melnyk & Fineout-Overholt, 2005). Research from Titler, Cullen and Audrey (2002) supported a link between EBP and better patient care, a saving in health care dollars, and a reduction in turnover among health care professionals.

There has been progress in the last 20 years in integrating EBP with the care of patients, through clinical practice guidelines, clinical alerts, and increased access to online resources through advances in information technology. Yet the transformation to EBP as a routine standard of care is not moving rapidly in all hospitals, especially non-academic medical centers (Hodge et al., 2003; Olade, 2004). Regardless of institutional size or geographic location, critical care units often fail to reflect state-of-the-science practice for routine nursing procedures (Wonjer & Jesurum, 2005). In 2006, Sigma Theta Tau International (STTI), the Honor Society of Nursing, conducted an online, electronic survey with more than 500 registered nurses (Alspach, 2006). They found that although 90% of respondents reported using EBP, 69% indicated a low to moderate level of understanding of EBP (Alspach, 2006).

In the critical care areas, nursing practice continues to grow in complexity. Nurses have greater responsibility and accountability for patient care. Critical care
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nurses encounter clinical problems every shift. With complex patient conditions and a high risk for complications and mortality, demonstrating the effectiveness of the best possible care is especially important.

Yet even in this specialty, nurses infrequently use current research to solve clinical problems. What are critical care nurses’ perceived barriers to utilizing EBP to solve those clinical problems? Understanding the differences in perceived barriers among nurses in various clinical settings, such as critical care, can provide important evidence for better adherence to clinical guidelines and greater participation in EBP (Pogorzelska, 2008). The purpose of this paper is to examine the current state of the science concerning barriers to EBP use from the perspective of the critical care nurse in a non-academic medical center to increase the efficacy of EBP educational campaigns.

Theoretical Framework

Research supports the assertion that new nursing graduates (less than five years since graduation) are more comfortable with finding and accessing research evidence than experienced nurses (STTI, 2006). As our nursing schools find successful approaches to preparing students for EBP, the need grows to find effective ways to teach our current nursing workforce.

Assessing thoughts and perspectives on EBP allows for educational interventions tailored to the needs of specific nursing units. An educational plan to address the research to practice gap needs to consider effective strategies in facilitating knowledge building in the adult learner. To better understand the perception of barriers and strategies to overcome them, Malcolm Knowles theory of adult learning will be applied (McEwen & Wills, 2010). Analysis of this issue from this perspective illuminates
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implications for nursing practice and the importance of theoretical frameworks in research, education, and institutional level programs.

Malcolm Knowles’ theory of adult learning looks at the process by which adults learn. Central to this theory is the belief that “the single most important thing in helping adults to learn is to create a climate of physical comfort, mutual trust and respect, openness, and acceptance of differences” (McEwen & Willis, 2010, p. 364). Essential concepts to this theory include creating an environment that is learner-focused where the teacher functions as the facilitator of knowledge (McEwen & Willis, 2010).

Knowles’ assumptions of adult learners are important to consider in the review of current literature on perceived barriers to EBP in critical care. These assumptions include: (1) adult learners must understand why they are learning something, (2) importance of incorporating the adult learners’ past experiences, (3) the need for immediacy in application of what is learned, (4) the need to focus on the concrete, as in real-life scenarios, and (5) the concept of motivation to learn (McEwen & Willis, 2010). The literature review, implications for practice, and implications for research in this paper will explore how these assumptions relate to current evidence.

**Literature Search**

Two databases were searched: Cumulative Index to Nursing and Allied Health Literature (CINAHL) and MedLine. In CINAHL, an advanced search with key words “evidence-based practice,” “critical care,” “barriers,” and “nurses” was used. Eighteen articles were found. The search was narrowed to peer-reviewed, research articles in English with publication dates ranging from 2005 to 2010, resulting in eleven articles. Five articles using the key concepts of perceived barriers, time constraints, knowledge deficit, and organizational factors were identified.
In MedLine, an advanced search was used with the same key words as used in CINAHL. Twelve articles were found. The search was narrowed to review articles from 2005 to 2010 and in English. The search yielded five articles. Three were relevant based on the key concept of nursing perception of barriers. These three articles were duplicates from those retrieved from CINAHL. Four other articles were identified from the reference lists, resulting in a total of eight articles. Five of these articles were subsequently reviewed since they focused on the following key concepts: perceived barriers surrounding time constraints, knowledge deficit, and organizational culture.

**Literature Review**

The perception of barriers to EBP is complex. Many of the articles identified several barriers. Key concepts from these barriers are operationally defined for the purpose of this paper. Time constraints refer to critical care nurses perception of an inability to follow the steps of EBP while caring for patients second to limited time to devote to this task (McKnight, 2006). Knowledge deficit refers to the lack of knowledge and skill in implementing the steps of EBP, such as access and application of research evidence, and evaluation and application of evidence to practice (Oh, 2008). Organizational culture refers to the implicit values and assumptions of the group that influences nursing practice (McCormack, et al., 2002). For example, organizational culture can influence nurses’ perception of behavior expectations regarding research utilization (Scott & Pollock, 2007). The categories presented below are concepts based on findings of the research articles. These concepts frequently overlapped from one research study to the other.
Knowledge Deficit

Oh (2008) analyzed the data from a national study of 63 critical care nurses working in university affiliated and educational hospitals in Korea to describe research activities, identify research utilization for practice, and examine factors related to research barriers. Along with finding a low level of research activities—ward manuals, clinical guidelines, ward managers, and senior nurses—critical care nurses were found to perceive greater barriers to EBP than nurses working in acute care medical/surgical wards. Though the reason behind this is unknown, the author speculates that this is due to the greater number of clinical decisions being made in this setting (Oh, 2008). Results included the top five perceived barriers: (1) lack of practical implications for research findings; (2) insufficient time on the job to implement new ideas; (3) no documented need to change practice; (4) inadequate facilities for implementation; and (5) no time to read research. Recommendations included continuing education on research methodology and research dissemination to the nurses, emphasizing the value of research at all levels of nursing education, and making use of available advanced technologies to facilitate timely retrieval of research. Limitations of this study included regional results that may not be generalizable outside of Korea and a small sample size.

Other studies have found a deficiency in knowledge surrounding EBP in critical care nurses. In a study of 52 critical care nurses and 8 acute care nurses, Snyder (2007) examined nurses’ beliefs about EBP and their use of EBP at the bedside. Although respondents scored positive beliefs about EBP, implementation of EBP steps, especially those that referred to the access and application of research evidence, was low. Nurses believed EBP was important and improved patients’ outcomes but lacked knowledge
about EBP and skills to perform it. Since nurses’ beliefs influenced implementation, results can be used to develop educational programs specific to the needs of nurses in the hospital. Other recommendations include education and training for nurses on the steps of EBP, especially in evaluation and application of evidence to practice. For example, nurses are often motivated to learn by moving up the clinical ladder. Pierson and Schuelke’s (2009) demonstrated positive learning outcomes when using EBP independent study packets augmented by one-on-one mentoring. The assessment of nurses’ perception of EBP allow for educational interventions tailored to the needs of specific units or hospitals.

**Time Constraints**

Time is another factor in the use of EBP. McKnight (2006) conducted an observational study in a 20 bed ICU with 50 hours of observation and in-context interviews to describe on-duty critical care nurses’ informative behaviors from the perspective of library and information science. Results showed that nurses sought answers by asking colleagues rather than looking it up. Barriers included difficulty navigating online systems, equipment failure, time, and perception of it being ethically wrong to take time away from patients to look up information. While most participants expressed a high regard for EBP, they had no way to follow the formal steps of EBP on duty. Any research had to be conducted off duty and off the pay clock. Their vigilant surveillance of their patients precluded any reading on duty. Though they want the best of what academia and libraries can provide, duties leave nurses little time to pursue best practice or use their academic skills at work. Recommendations included on-call, ready
Evidence-Based Practice recommendations, and clinical informaticists to provide reliable knowledge-based
information in a timely manner (McKnight, 2006).

An editorial by Dracup and Bryan-Brown (2006) discussed the many barriers to
EBP, such as homogenous samples in clinical trials, the lack of evidence to many clinical
questions, the lack of inclusion of patient preference in research recommendations, and
the time spent by nurses implementing protocols. Dracup and Bryan-Brown recommend
EBP include an assessment of available resources in such that nurse-patient ratios are
included in assessment of appropriateness of recommendations for new policies and
procedures. As EBP is not limited to individual nurses use of research to guide practice,
but inclusive of carrying out clinical guideline recommendations, these recommendations
must be feasible in the working climate.

In order to assess ICU healthcare professionals’ attitudes regarding practice
guidelines and perceived barriers, Pogorzelsk (2008) conducted a secondary analysis of
39 volunteer hospitals with 1359 personnel, 75 percent being critical care nurses. Age,
profession, type of ICU and race were identified as significant predictors of attitude
scores. Results showed a positive attitude toward practice guidelines, high awareness and
familiarity. There was a view that guidelines were too “cookbook” and inconvenient or
cumbersome. Health care professionals expressed a perception of lack of time to stay
informed about guidelines, and that guidelines may increase malpractice liability. Older
respondents had more favorable attitudes than younger respondents. There was a greater
positive effect compared to similar studies a decade ago, reflecting a change in clinical
practice to being more receptive to guidelines and EBP.
the influence of nursing school education on utilization of EBP. The aim was to assess resource utilization and perceived barriers to EBP.

Respondents were asked questions such as where do they look for answers to clinical questions, what published information do they use, where do they look on the Internet, and describe some of the barriers to using research to guide your practice. Similar to the literature review, respondents stated they most often use the charge nurse or other staff nurses for feedback when they have a clinical question. One respondent stated, “First of all I ask colleagues, I ask the charge nurse, I ask other people who work there a lot, and I am still kind of new there, I am still learning, but no I ask people.”

In answer to the same question, another respondent commented, “If a physician is there that is involved, I grab them first. Say what is this, what are we doing? What do we need to do? I go to other co-workers and collaborate with them and say this is what I am seeing. I just pick brains.”

In response to the question regarding where he or she goes to access information on the Internet, one respondent answered, “I don’t know where to go to get specific health worker information versus the public [health information for the general public].”

Here is a response to the question regarding perceptions of barriers to EBP: “Well the time is the biggie, but for me it is feeling somewhat incompetent on the computer. I have been a holdout for a lot of years with computers. I am intimidated by it.” Another respondent portrayed it in a similar way: “Two things [are barriers to EBP], one is the time constant and the second thing is my own ignorance and lack of education.”

Organizational culture came up as a barrier in this respondent’s answer, “It is this standard of practice, what the normal practice is. It doesn’t seem that conducive to say,
‘can we try this’ or ‘I have read that this works.’ When have you ever said that? It seems more physician driven. But I still think it should be an environment where you can offer suggestions.”

**Implication for Nursing Practice**

The review of current literature and interviews with local critical care nurses are congruent in identifying perceptions of barriers, including time constraints, a knowledge deficit, and organizational factors such as culture and climate. Using Knowles’ theory of the adult learner, we can identify how these factors impair adults’ ability to learn. This will lead to a better understanding of effective strategies to facilitate learning and further adoption of EBP.

Oh (2006) identified the top five perceived barriers to adoption of EBP. One of the barriers was not understand the link between research and better patient outcomes. According to supporters of Knowles, an assumption of the adult learner is that they need to know why they need to learn something. Education involving two steps in the EBP process may help nurses recognize the uncertainty of practice and how research can help their practice: asking a clinical question and implementing the change in practice (Neville & Horbatt, 2008). As nurses are the experts in generating clinically relevant research questions, developing skill in identifying researchable questions is key in helping the learner understand implications for practice.

This inquiry ties into another assumption of the adult learner: adults are primarily motivated by a desire to solve immediate and practical problems (McEwen & Wills, 2011). This is why time constraints are such a huge barrier to EBP in critical care. Nurses go home from a busy shift and the problem is over. In the midst of a clinical
problem, nurses identify inclination to ask co-workers and physicians first when they need an answer to a clinical question. One answer may be to increase availability of quick, at hand research evidence for common clinical problems, and provide easy access to this material on the units. A nurse-friendly research environment includes updating ward manuals with best current available evidence, distributing research articles and research summaries directed at clinical problems, and operating research projects and journal clubs (Oh, 2008).

Another answer to this is an educational campaign that informs nurses early on the need to tolerate frustration and that search techniques are sophisticated, complex, and time-consuming. But with practice comes timely proficiency. In successful campaigns, such as Neville & Horbatt’s (2008) EBP implementation with orthopedic nurses, nurses report the experience to be challenging, exciting, and highly feasible in their clinical practice.

Supporters of Knowles’ believe that as people mature their self-concept moves from one of being dependent toward one of being self-directed (McEwen & Wills, 2011). Acknowledging this need in the adult learner, it is easy to see how influential organizational culture can be in creating a barrier to EBP. If nurses feel that research utilization is not expected of them, not supported by management, or that decisions for practice are made arbitrarily for them from a top down hierarchy, nurses are less likely to be motivated to initiate change. However, facilities can show they value research utilization and EBP by making use of the available advanced technologies, providing the means to education on the steps in EBP, and promoting nurse initiated research activities in the form of collaborative groups (Oh, 2007; Olade, 2004).
Scott and Pollock (2008) advise educators to conduct an assessment of individual unit culture before beginning an EBP educational campaign. Four areas of unit culture are pertinent to assess: the structure of authority, the nature of nurses’ work, the workplace ethos, and valued knowledge forms (Scott & Pollock, 2008). An example is utilizing an assessment tool that looks at how unit culture affects nurses’ research utilization behavior, such as how routinized is nursing work and if the nursing unit had a more or less hierarchical structure of authority. A frequent complaint of nurses is that they do 90% of the care and are involved in 10% of the decisions (Scott & Pollock, 2008). Nurses’ struggle with autonomy issues may be tied to their lack of a monopoly over their area of work. Supported by research findings in the sociology of nurse’ work, caring work is viewed as women’s work and is often undervalued (Lawler, 1993). These challenges significantly affect nurses’ use of research. A unit culture with little nurse autonomy or nurse input into decision-making will influence nurses’ willingness and ability to use research to inform their practice.

A thorough assessment of unit specific cultural factors that may impede an EBP educational campaign is needed. This assessment can identify obstacles and ways to overcome them. For example, educators can evaluate ways to increase opportunities for nurses to reflect on practice, and to network and dialogue about new knowledge, which is crucial for innovative thought (Dopson, FitzGerald, Ferlie, Gabbay, & Locock, 2002).

Interviews with critical care nurses showed that they were eager to use highly technical equipment (Scott & Pollock, 2008). Though this equipment keeps nurses at the bedside, it may facilitate a desire to explore research. Providing computers at the bedside
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with Internet connections and research databases may facilitate this desire and encourage nurses to use this technology through many of the steps of EBP.

**Implications for Nursing Research**

Further studies are needed on the perception of barriers to EBP amongst critical care nurses. These could employ both quantitative and qualitative methods to gain an increasing understanding of this topic. Research evaluating strategies to overcome these barriers, specifically educational initiatives or ones that utilize Knowles theory of the adult learner would increase the understanding of perception of barriers amongst critical care nurses.

The literature review illuminates many possibilities for nursing research. A comparison of new graduate nurses’ perception of barriers and expert practitioners could increase the understanding of institutional success in providing the needed education for EBP. Research on the synergistic effect of collaboration between nursing practice and nursing research is also needed (Oh, 2007).

From an administrative perspective, the cost of implementing EBP educational campaigns is important. Are resources sufficient to incorporate them into the daily routine of the nurse caring for the patient? What is the cost of implementing EBP protocol that involves nurses?

More investigation is needed into class, gender, and power, and how this could further an understanding of nurses’ role in research utilization behavior (Scott & Pollock, 2008). There is a need for theory to articulate how nursing unit culture effects nurses’ ability to use research in practice. Theoretical development can help promote the design of effective organizational interventions.
Furthermore, a distinction is needed to better understand the correlation between information literacy and EBP. Research on the efficacy of accessing electronic resources amongst critical care nurses is needed. This may help nurse educators plan EBP curriculum that focuses on needed skill development.

Conclusion

The literature review illustrates perceptions of barriers to EBP amongst critical care nurses, which includes time constraints, a knowledge deficit, and organizational culture. Knowles theory of the adult learner gives great insight for the nurse educator on why these barriers are so powerful. Research supports that educational campaigns concerned with how adults learn will be more successful in obtaining their outcomes.
References


