Evidence-Based Practice Competencies for RNs and APNs: How Are We Doing?

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Abstract

As we approach the end of 2020, the Year of the Nurse and Nurse Midwife, it is a good time to reflect on our evidence-based practice (EBP) competencies through a review of a recent study by Melnyk and colleagues. Before describing these competencies, our progress in achieving EBP competency, and the effect competency status has on health care quality, safety, and patient outcomes, this column reviews the definition of EBP and provides a high-level overview of the steps of EBP as defined in Melnyk and Fineout-Overholt.

Keywords: evidence-based practice; competencies; research; EBP process

As the year of the nurse and nurse Midwife winds down, it is a good time to reflect on our evidence-based practice (EBP) competencies through a review of a recent study by Melnyk and colleagues.[1] Before describing these competencies, our progress in achieving EBP competency, and the effect our competency status has on health care quality, safety, and patient outcomes, this column reviews the definition of EBP and provides a high-level overview of the steps of EBP as defined in Melnyk and Fineout-Overholt.[2]

WHAT IS EBP?

Melnyk and colleagues define EBP as "a life-long problem-solving approach to the delivery of health care that integrates the best evidence from well-designed studies (external evidence) and integrates it with a patient's [or family's] preferences and clinician expertise, which includes internal evidence gathered from patient data."[1] Incorporating family and patient preferences may be viewed through the lenses of patient-centeredness and cultural competence. Clinician expertise is practice-based evidence accumulated over the course of care for patients with similar diagnoses. EBP projects and research studies may stem from practice-based evidence, such as observations of consistent patient responses to specific interventions. Further EBP enhances the four dimensions in the Institute for Health Improvement Quadruple Aim for Health Care:[3] overall improvement in health care quality for populations, patient experience and outcomes, cost reduction, and health care team well-being.[3–5]

THE SEVEN STEPS OF EBP

The medical literature describes the process for EBP in five steps.[6]

1. Developing an answerable clinical question
2. Searching for the best evidence to address the question
3. Critically appraising the validity of the evidence
4. Integrating the evidence with clinical expertise and the patient's preferences and values
5. Evaluating the effectiveness of practices or changes based on Steps 1–4

Nursing models of EBP do not stop there. Step 6 is the dissemination of the outcomes of the evidence-based practice change.[7]

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However, before starting and moving through the evidence-based process, Melnyk and colleagues assert that a spirit of inquiry is essential. Nurses need to be "comfortable and excited about asking questions regarding their patients' care [and] challenging current institutional or unit-based practices."[7] Thus, they suggest Step 0 *cultivate a spirit of inquiry within an EBP culture and environment*.[7]

EBP COMPETENCIES: HOW ARE WE DOING?

The American Nurses Association defines competency as "an expected and measurable level of nursing performance that integrates knowledge, skills, abilities, and judgment based on established scientific knowledge and expectations for nursing practice."[8] Benner further asserts that, distinct from a basic skill, a competency is the ability to perform in the real world under a variety of circumstances.[9]

A Delphi survey to obtain consensus of opinion among 80 EBP mentors across the United States resulted in a set of 13 EBP competencies for practicing registered nurses and 11 additional competencies for practicing advanced practice nurses (APNs) (Table 1).[10] In a subsequent cross-sectional descriptive study, Melnyk and colleagues sought to describe the state of EBP competency among U.S. nurses and to "determine important factors associated with EBP knowledge."[1]

Nineteen hospitals and health care systems participated in the study. The organizations distributed information about the

TABLE 1 ■ EBP Competencies

EBP competencies for practicing registered professional nurses
1. Questions clinical practices for the purpose of improving the quality of care.
2. Describes clinical problems using internal evidence.* (internal evidence* = evidence generated internally within a clinical setting, such as patient assessment data, outcomes management, and quality improvement data)
3. Participates in the formulation of clinical questions using PICOT* format. (*PICOT = Patient population; Intervention or area of interest; Comparison intervention or group; Outcome; Time)
4. Searches for external evidence* to answer focused clinical questions. (external evidence* = evidence generated from research)
5. Participates in critical appraisal of preappraised evidence (such as clinical practice guidelines, evidence-based policies and procedures, and evidence syntheses).
6. Participates in the critical appraisal of published research studies to determine their strength and applicability to clinical practice.
7. Participates in the evaluation and synthesis of a body of evidence gathered to determine its strength and applicability to clinical practice.
8. Collects practice data (e.g., individual patient data, quality improvement data) systemically as internal evidence for clinical decision making in the care of individuals, groups, and populations.
9. Integrates evidence gathered from external and internal sources in order to plan EBP changes.
10. Implements practice changes based on evidence and clinical expertise and patient preferences to improve care processes and patient outcomes.
11. Evaluates outcomes of evidence-based decisions and practice changes for individuals, groups, and populations to determine best practices.
12. Disseminates best practices supported by evidence to improve quality of care and patient outcomes.
13. Participates in strategies to sustain an EBP culture.
EBP competencies for practicing advanced practice nurses **All competencies of practicing registered professional nurses plus:**
14. Systematically conducts an exhaustive search for external evidence* to answer clinical question. (external evidence*: evidence generated from research)
15. Clinically appraises relevant preappraised evidence (i.e., clinical guidelines, summaries, synopses, syntheses of relevant external evidence) and primary studies, including evaluation and synthesis.
16. Integrates a body of external evidence from nursing and related fields with internal evidence* in making decisions about patient care. (internal evidence* = evidence generated internally within a clinical setting, such as patient assessment data, outcomes management, and quality improvement data)
17. Leads transdisciplinary teams in applying synthesized evidence to initiate clinical decisions and practice changes to improve the health of individuals, groups, and populations.
18. Generates internal evidence through outcomes management and EBP implementation projects for the purpose of integrating best practices.
19. Measures processes and outcome of evidence-based clinical decisions.
20. Formulates evidence-based policies and procedures.
21. Participates in the generation of external evidence with other health care professionals.
22. Mentors others in evidence-based decision making and the EBP process.
23. Implements strategies to sustain EBP culture.
24. Communicates best evidence to individuals, groups, colleagues, and policymakers.

Source: From Melnyk BM, Gallagher-Ford L, Long LE, Fineout-Overholt E. The establishment of evidence-based practice competencies for practicing registered nurses and advanced practice nurses in real-world clinical settings: Proficiencies to improve health quality, reliability, patient outcomes, and costs. *Worldview Evid Based Nurs.* 2014;11(1):5–15. Reprinted with permission.
Abbreviation: EBP = evidence-based practice.

study to their nursing staffs through an electronic communication that provided a link to the study. Prior to beginning the study survey, online consent to participate was obtained and all data were deidentified. In addition to demographic data, the researchers used six instruments to measure EBP knowledge, EBP beliefs, EBP implementation, perceived organizational culture and readiness for EBP, mentorship in EBP, and the EBP competencies (see Table 1). Psychometric properties of the instruments are summarized in Table 2. For more information about the instruments, see Melnyk and colleagues.[1,11,12]

A total of 2,344 nurses participated in the study. The mean age of the participants was 44.5 years (*SD* = 12.5); 92 percent identified as female. The majority (90.4 percent) of the participant were non-Hispanic; 85.5 percent White, 4.9 Black. Among the remaining participants, 4.2 percent identified as Hispanic and 4.5 percent as "Other." More than half of the participants had bachelor's degrees (53.8 percent), 21.9 percent had a diploma or associate degree, and 21.5 percent had a master's degree or higher. Almost 70 percent of the participants worked in a Magnet-designated organization. Not all numbers totaled to 100 percent because of missing data.[1]

The researchers found all of the competency items except item 17 (refer to Table 1) scored between needs improvement and competent. Item 17, "Leads transdisciplinary teams in applying synthesized evidence to initiate clinical decisions and practice changes to improve the health of individuals, groups, and populations," scored the lowest, with an average score of 1.97 (*SD* = 0.8). This competency is designated as an APN competency. Item 1, "Questions clinical practices for the purpose of improving the quality of care," had the highest mean score, 2.72 (*SD* = 0.76). Overall, the mean competency score was 53.5 (*SD* = 16.1) out of a possible 96. Higher EBP competency was significantly highly associated with younger age ($p < .001$) and higher education ($p < .001$). There was not a significant difference in scores across gender ($p = .09$), race/ethnicity ($p = .17$), or working in a Magnet-designated organization ($p = .28$).[1]

There were positive associations between EBP competency and the other EBP elements measured. There was a strong positive association between EBP competency and both EBP beliefs ($r = .66$) and EBP mentoring ($r = .69$). The association between EBP competency and EBP knowledge was moderately positively associated ($r = .43$). Finally, there was a small positive association between EBP competency and organizational culture ($r = .29$).[1]

The researchers used a multiple linear regression model to analyze all of the variables that were significantly associated with EBP competency in the bivariate tests. An advanced degree (master's or doctoral), higher EBP knowledge, higher EBP beliefs, and higher EBP mentoring were strong predictors of higher EBP competency (all p values $< .001$). In this model, the age of the nurse and EBP culture were no longer significant predictors of EBP competency. The researchers obtained similar results when the data were reanalyzed treating age, culture, knowledge, beliefs, and mentoring as continuous variables in the model.[1]

TABLE 2 ■ Description and Psychometric Properties of Study Instruments[1,11,12]

Characteristic	Instrument	Description	Validity/Reliability
EBP knowledge	New EBP knowledge scale	25 multiple choice, 13 true or false questions	Face, content, construct validity; internal consistency reliability with this study sample 0.87
EBP beliefs	EBPB scale	16-item Likert-type scale ranging from 1—strongly disagree to 5—strongly agree. Measure beliefs about value of EBP and ability to implement EBP	Face, content, construct validity; internal consistency reliabilities > 0.85; Cronbach's alpha with this study sample 0.89
EMP implementation	EBPI scale	18-item Likert-type scale which asks in the last eight weeks how often certain EBP tasks were performed. Items are totaled, scores range from 0 to 72. Measures the extent of EBP implementation	Face, content, construct validity; internal consistency reliabilities > 0.85; Cronbach's alpha with this study sample 0.96
Organizational culture	OCRSIEP scale	26-item Likert-type scale ranging from 1—none at all to 5—very much. Examines the existence of cultural factors that influence system-wide EBP implementation and overall readiness for integration of EBP; how it compared to six months earlier	Face and content validity; internal consistency reliabilities > 0.85; Cronbach's alpha with this study sample 0.96
EBP mentorship	New EBP mentorship scale	8-item Likert-type scale ranging from 0—none at all to 4—very much so. Measures degree of availability of EMP mentorship	Face, content, construct validity; internal consistency reliability with this study sample 0.99
EBP competencies	New EBP competency scale	24 items consisting of the EBP competencies. Participants rate themselves using a 4-point Likert scale: 1—not at all competent; 2—need improvement; 3—competent; 4—highly competent	Face, content, construct validity; internal consistency reliability with this study sample 0.99

Abbreviations: EBP = evidence-based practice; EBPB = EBP beliefs; EBPI = EBP implementation; OCRSIEP = Organizational Culture and Readiness for System-Wide Integration of Evidence-Based Practice.

Melnyk and colleagues express alarm in these findings because over the past several decades the importance of EBP in promoting health care quality and safe patient care has been an emphasis in nursing practice. They further noted that the findings suggest that education is a primary predictor in self-reported EBP competence.[1] The researchers noted that based on their results there is evidence of a shift from teaching research to teaching EBP. This educational shift had a positive effect on EBP competence among younger and more highly educated nurses.[1]

A limitation of the study was the use of a convenience sample of nurses, and thus the results may not be generalizable to all U.S. nurses. Because the researchers had no way of knowing how many nurses opened the e-mail invitation but did not participate, the actual response rate could not be determined. Additionally, self-report measures of the EBP competencies may under- or overestimated actual competence.[1]

The researchers made several recommendations for future research, including testing interventions to achieve the EBP competencies; exploring the most effective means of integrating research, clinical expertise, and patient preferences and values; and studying how to plan and implement EBP changes.[1] Another potential area of study is EBP competency across nursing specialties.

As previous noted, EBP plays an important role the four dimensions in the Institute for Health Improvement Quadruple Aim for Health Care.[3] Based on the study by Melnyk and colleagues, there is still work needed to raise the level of EBP competency. With this in mind, future EBP columns will explore each of the steps of the EBP process in greater detail. The next column will examine the literature on cultivating a spirit of inquiry.

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