Implementing evidence-based practice: effectiveness of a structured multifaceted mentorship programme

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Abstract

Aim—This paper is a report of the effectiveness of a structured multifaceted mentorship programme designed to implement evidence-based practice in a clinical research intensive environment.

Background—Barriers to implementing evidence-based practice are well-documented in the literature. Evidence-based practice is associated with higher quality care and better patient outcomes than care that is steeped in tradition. However, the integration of evidence-based practice implementation into daily clinical practice remains inconsistent, and the chasm between research and bedside practice remains substantial.

Methods—This quasi-experimental mixed methods study included three focused discussions with nursing leadership and shared governance staff as well as pre- (N=159) and post-intervention (N=99) questionnaires administered between June 2006 and February 2007. Online questionnaires included measures of organizational readiness, evidence-based practice beliefs, evidence-based practice implementation, job satisfaction, group cohesion and intent to leave nursing and the current job.

Results—Participants in the evidence-based practice mentorship programme had a larger increase in perceived organizational culture and readiness for evidence-based practice and in evidence-based practice belief scores than those who did not participate. Qualitative findings

suggested that leadership support of a culture for evidence-based practice and the dedication of resources for sustainability of the initiative needed to be a priority for engaging staff at all levels.

Conclusion—These findings corroborate other studies showing that nurses' beliefs about evidence-based practice are significantly correlated with evidence-based practice implementation and that having a mentor leads to stronger beliefs and greater implementation by nurses as well as greater group cohesion, which is a potent predictor of nursing turnover rates.

Keywords

INTRODUCTION

Evidence-based practice (EBP) is a conscientious and explicit approach to the delivery of healthcare that integrates the best evidence from research with a clinician's expertise and a patient's expectations, preferences and values (Sackett et al. 1996). When delivered in a context of caring and an organizational culture that promotes best practices, EBP is associated with higher quality care and better patient outcomes than care that is steeped in tradition (Melnyk and Fineout-Overholt 2005). Although healthcare leaders, government agencies and professional organizations have emphasized that an evidence-based approach to healthcare should be the standard of practice, the majority of clinicians in healthcare systems do not consistently implement evidence-based care (Institute of Medicine (U.S.). Committee on the Health Professions Education Summit et al. 2003, Melnyk et al. 2005).

The effect of EBP on patient outcomes and cost has been extensively discussed in the literature. Findings from studies have indicated that EBP improves patient outcomes, care quality and practitioners skills and reduces practice variation and healthcare costs (Madigan 1998, Melnyk 1999, Roberts and Yeager 2004). It also is proposed as a critical strategy to speed the application of research in clinical practice and to optimize care delivery (Goode et al. 2000, Kitson 2000, Levin et al. 1997, Richardson et al. 2002). Therefore, in the future, healthcare funders are likely to only reimburse care that is based on the best evidence (Melnyk 1999). From an administrative standpoint, improved cost-effectiveness (Winch et al. 2002) and improved ability to negotiate with funders (Madigan 1998) are important outcomes. Other outcomes that can be derived from the EBP process include clinical practice guidelines, protocols, and standards (Swinkels et al. 2002), all of which may lead to (a) greater consistency in the care provided, (b) greater patient satisfaction due to improved outcomes, and (c) a higher quality of care and healthcare provider satisfaction.

Despite very many educational endeavours, consumer pressure, and multiple government reports, the integration of EBP implementation into daily clinical practice remains inconsistent, and the chasm between research and practice remains substantial. The translation of basic research discoveries into real-world applications presents complex and multifaceted challenges (Aarons 2005, Chen and Worrall 2006, Melnyk and Fineout-Overholt 2005). Capacity-building for EBP in under-resourced environments requires that organizational leaders use creativity to identify mentors and engage nursing staff in the process and uptake of evidence to improve practice. International collaborations, improvement science networks, and efforts by professional organizations are all potential mechanisms to bring staff leaders and EBP mentors into sustained contact in relation to the development, implementation, evaluation and dissemination of EBP initiatives. There is a role for organizations such as Sigma Theta Tau International, specialty organizations and academic centers of excellence to create initiatives that offer programming and partnership support for EBP mentors and staff leaders.

Multiple barriers have contributed to the slow uptake of EBP across healthcare systems, including (a) inadequate knowledge and EBP skills by healthcare professionals, (b) misperceptions about EBP, (c) lack of informatics competencies, (d) insufficient administrative support and resources at the point of care, (e) lack of EBP mentors in healthcare systems, and (f) traditional approaches to teaching healthcare students the rigorous process of how to do research rather than how to use research to guide best practice (Fineout-Overholt et al. 2005, Pagoto et al. 2007, Pravikoff et al. 2005). In contrast, research has supported key facilitators of EBP, including (1) an individual's knowledge and skills in EBP, (2) beliefs that EBP improves care and outcomes, (3) beliefs in the ability to implement EBP, (4) EBP mentors who are skilled in both EBP and organizational culture and change, as first proposed in the Advancing Research and Clinical practice through close Collaboration (ARCC) Model (Melnyk and Fineout-Overholt 2002), (5) administrative/ organizational support, and (6) journal clubs (Fineout-Overholt et al. 2005, Melnyk et al. 2004). Findings also indicate that individuals who rate themselves higher on knowledge and beliefs about the value of EBP and their ability to implement it are more likely to teach it to others (Melnyk et al., 2008a, Melnyk et al. 2004).

BACKGROUND

Several conceptual models to guide implementation of EBP by individuals and in healthcare delivery systems have been developed. These include models that focus on the process of individual practitioner incorporation of the principles of EBP as well as system-wide strategies for implementation. Process models for EBP implementation by individual practitioners include (a) Stetler's model, which was originally a research utilization model (Stetler 2001),(b) the DiCenso, Cullum, Ciliska & Guyatt EBP Model (DiCenso et al. 2005), which adds healthcare resources as a critical element of evidence-based decision-making for individual practitioners, and (c) the Clinical Scholar Model (Schultz 2005), in which a cadre of staff nurse mentors are developed to foster an environment in which direct care nurses are encouraged to continually ask questions. Examples of system-wide implementation models of EBP include: (a) The Iowa Model (Titler 2002), (b) Rosswurm and Larabee's Model (Rosswurm and Larrabee 1999), and (c) the ARCC Model, which also includes important concepts for individual behavior change in clinicians as a key strategy in advancing and sustaining system-wide implementation of EBP (Melnyk and Fineout-Overholt 2002). Findings from studies testing the ARCC Model have indicated that strengthening clinicians' beliefs about EBP leads to greater implementation of evidence-based care, and that organizational culture is important in strengthening the EBP beliefs of clinicians.

Although EBP conceptual models are important and useful in guiding general implementation strategies to advance EBP in individuals and in organizations, few studies have generated empirical evidence to support the proposed relationships in the majority of these models. Specifically, it is largely unknown what strategies within the proposed models contribute to system-wide adoption, implementation and sustainability of EBP. As a result, there is an urgent need to test strategies to advance EBP throughout international healthcare systems.

The ARCC Model: Application within a research intensive environment

The Advancing Research & Clinical Practice through Close Collaboration (ARCC) model was first conceptualized in 1999 by Melnyk as a mentorship framework to assist advanced practice nurses in implementing EBP. Melnyk and Fineout-Overholt (2002) have further developed the model, which now serves as a guide to advance system-wide implementation and sustainability of EBP (See Figure 1). The first step in the ARCC model is an organizational assessment of the culture and readiness for EBP so that EBP facilitators and barriers can be identified, togheter with a plan to overcome them. EBP mentors are then

developed and placed within the healthcare system to work directly with point-of-care staff to foster their EBP knowledge, beliefs and skills in evidence-based care. Previous research findings have indicated that EBP mentors are key in strengthening clinicians' beliefs about EBP and their ability to implement it (Melnyk and Fineout-Overholt 2002). Other studies have also shown that when EBP beliefs are strong, there is greater implementation of EBP (Melnyk et al. 2004).

The ARCC model provided a framework for the development of a programme for nurses to become EBP mentors and champions at the National Institutes of Health Clinical Center (CC). In an effort to prepare EBP mentors and increase implementation of EBP in individuals and systems, Melnyk and Fineout-Overholt designed two workshops to begin the development of EBP mentors at the CC. In addition, Yates and Wallen designed local initiatives that fostered engagement in EBP that were offered in between the workshop sessions to complement the Melnyk & Fineout-Overholt programme. EBP mentors worked with direct care nurses on clinical research units to strengthen their beliefs about the value of EBP and their ability consistently to deliver evidence-based care.

The Clinical Center (CC) is a 234-bed research hospital in Bethesda, Maryland that supports the Intramural Research Program (IRP) of the National Institutes of Health. It opened in 1953 and remains the largest inpatient facility in the USA devoted exclusively to clinical research. Its unique design was created to support the development of translational research. The research-intensive nature of the practice environment created a fertile ground for systematic implementation of evidence-based practice in a setting that was simultaneously creating new evidence for practice. The ARCC model was selected for the study reported in this paper because of its focus on advanced practice nurses as EBP mentors and the involvement of staff at all levels in implementation.

THE STUDY

Aim

The aim of the study was to evaluate the effectiveness of a structured multifaceted mentorship programme designed to implement evidence-based practice in a clinical research intensive environment.

Design

A quasi-experimental mixed methods design was used.

Participants

The nurses who were targeted for the EBP mentor programme and survey were those who would ultimately participate in leading and/or mentoring nurses at all levels and in all specialties throughout the nursing department. They included nurse managers, clinical nurse specialists, clinical educators, nurse researchers, senior clinical staff, executive staff and leaders in the Shared Governance Nursing Practice Council. For the comparison group, non-workshop attendees were stratified into clinical practice areas and then randomly selected from those areas to complete the survey. Nurses from ambulatory care clinics and day hospitals were also randomly selected for participation. The baseline survey data included 159 participants: 94 participants in the EBP workshop group and 65 in the non-workshop group. The post-intervention survey included 99 participants, with 58 in the EBP workshop group and 41 in the non-workshop group. The sample demographics characteristics are described in Table 1.

Programme to Prepare EBP Mentors

The programme began with a two-day intensive workshop to provide a general foundation to developing EBP skills among identified nurse champions needed to promote, implement and sustain EBP (Fineout-Overholt et al. 2004, Fineout-Overholt et al. 2005, Preheim et al. 2006). The workshop was targeted at a core group of nurse leaders, including senior clinical research nursing staff, Shared Governance committee chairs, clinical nurse specialists, nurse managers and nurse educators who were identified as most likely to become EBP mentors throughout the organization. The aim of the programme was to improve attendees' EBP knowledge and skills, as well as their beliefs about the value of EBP and the ability to implement it. Additionally, the programme was designed to develop and empower mentors by providing ongoing mentorship skill-building activities. These included activities such as an EBP luncheon workshop on ways to strengthen mentorship, a holiday tea party to celebrate and support EBP mentors and nurse leaders, and interactive lectures on the basics of EBP presented for the Clinical Practice Committee of the Nursing Practice Council. Tutorials designed to increase nurses' knowledge related to EBP were offered via the nursing intranet.

Data Collection

In June 2006 nurses enrolled in the EBP workshop, as well as a stratified random sample of those not registered to attend the workshop, were invited by email to participate in an online, Survey Monkey, EBP programme evaluation study. Focused discussion groups were also conducted via telephone conference in June 2006 to assess the NIH Clinical Center organizational readiness for EBP. The post-test was administered via Survey Monkey in February 2007 to both those who attended and those who did not attend the EBP workshops.

Focus Groups—Focus groups consisted of a convenience sample of clinical nurse specialists (n=4); nurse managers from inpatient and ambulatory care areas (n=9); and members of the Shared Governance Clinical Practice Committee (n=5).

Focus Group Questions—Each of the three formative focused discussions included the following four questions: 1) What does EBP mean to you? 2) Where does EBP fall among priorities at NIH? 3) What needs to happen to make EBP a consistent part of the culture at NIH CC? and 4) What are the barriers to EBP at NIH CC? These qualitative questions provided a formative evaluation of participants' knowledge about the process of EBP as well as a general overview of the organizational readiness for implementing EBP. Content from these focused discussions was used to determine perceptions and potential organizational barriers prior to programme implementation. As described by (Creswell 2003), the credibility of this content was validated through "member checking" (p.196), where the content was discussed with the focused discussion participants after content analysis had been conducted by the investigators.

Survey Measures

Organizational Culture and Readiness for System-Wide Implementation of EBP (OCRSIEP): The OCRSIEP (Fineout-Overholt and Melnyk 2006) is a 25-item scale that measures organizational culture and readiness for system-wide integration of evidence-based practice. The 25 items are measured on a 5-point Likert-type scale ranging from *not at all* to *very much*. Higher total scores reflect greater organizational readiness for EBP. Pretest and posttest Cronbach's alphas with the sample in this study ranged from 0.93 to 0.94; this is comparable to previous psychometric testing of the EBP Implementation Scale, which has consistently shown values above .90 (Melnyk et al. 2008b).

EBP Beliefs Scale (EBPB): The EBPB, designed by Melnyk and Fineout-Overholt (2003) is comprised of 16 items that tap an individual's beliefs about the value of EBP and their ability to implement it. The items are measured on a 5-point Likert-type scale ranging from *strongly disagree* (1) to *strongly agree* (5). There are two reverse-scored items. Once reversed, all items are summed to give a total score. Higher scores reflect more positive beliefs about EBP. Construct validity of the scale has been supported through factor analysis (Melnyk et al. 2008b). Cronbach's alpha in the present study ranged from 0.90 to 0.92, which is comparable to previous psychometric testing of the measure (Melnyk et al. 2008b).

EBP Implementation Scale (EBPI): The EBPI is an 18-item EBP Implementation Scale (Melnyk and Fineout-Overholt 2003). For each item, respondents indicate how often they have demonstrated a particular EBP implementation behavior over the past 8 weeks (e.g., used evidence to change my clinical practice; critically appraised evidence from a research study). Responses range from 0 times over the past 8 weeks to more than 8 times over the past 8 weeks. Higher total scores reflect more frequent use of EBP behaviors and skills. Construct validity has been supported through factor analysis (Melnyk and Fineout-Overholt 2003). In the present study, pretest and posttest Cronbach's alphas for the EBP Implementation Scale ranged from 0.92–0.94, which is comparable to previous psychometric testing (Melnyk et al. 2008). The EBPB and EBPI scales were previously validated with a sample of 394 nurses attending continuing education workshops. Principal component analysis confirmed that each of the scales was measuring a distinct, unidimensional construct (Melnyk et al. 2008).

Group Cohesion Scale: Group cohesion was measured using the 6-item Group Cohesion Scale (Byrne 1961, Good and Nelson 1973). This instrument uses a 7-point Likert-type response scale developed to measure group judgment or attitude similarities and was designed so that lower summed scores reflected higher group cohesion. To promote ease of interpretation, all items were reverse-scored so that higher scores indicated greater group cohesion. Previous nursing studies have provided evidence of predictive validity explaining statistically significant variance in job satisfaction (Hinds et al. 1998, Hinshaw et al. 1987, Lucas et al. 1993, Shader et al. 2001). Pretest and posttest Cronbach's alpha reliability scores in the present study ranged from 0.81–0.89.

Job satisfaction: Job satisfaction represents the degree of satisfaction individual nurses feel toward their job and was measured using the previously validated and reliable 7-item Price and Mueller Job Satisfaction questionnaire (1981 (1986). Likert responses on the scale range from strongly agree (1) to strongly disagree (5). Typically, lower total scores indicate higher job satisfaction. However, for ease of interpretation, items that are usually reverse-scored on this scale (i.e., I am often bored with my job; I definitely dislike my job; Each day on my job seems like it will never end) were not, and the other four items were reverse-scored so that higher scores reflected increased job satisfaction. Pretest and posttest Cronbach's alpha in the present study ranged from 0.84–0.88.

Intention to Leave Scale: Nurses' intentions to leave their current position and to leave the profession were evaluated with two measures. The two-item *Intent to Leave Scale* asks how likely it is that the respondent will leave their job within the next six months and the frequency with which they have sought out other job possibilities in nursing in the past six weeks (Price and Mueller 1986). The items were reverse-scored and summed so that higher scores indicated increased intent to leave their current nursing positions.

Nurses' Retention Index (NRI): The NRI measures nurses' intention to stay in nursing or to leave the profession (Cowin 2002). This 6-item Likert scale has eight responses to each item, ranging from definitely false (1) to definitely true (8). There are two reverse-scored

items (e.g., As soon as it is convenient for me I plan to leave the nursing profession). Higher scores indicate stronger retention within the profession. Construct validity has been established through the exploratory and confirmatory factor analysis (Cowin 2002). In normative samples, the NRI's internal consistency reliability has been greater than 0.90 (Hart 2005).

Ethical Considerations

This study was approved through the National Institutes of Health Intramural Office of Human Subjects Research. Participation in the focus groups or completing the survey was taken as consent to participate in the study.

Data Analysis

Qualitative analysis of focused discussions prior to the online survey and workshop included content analysis of responses that were used to assess the organizational climate for the implementation of EBP. Quantitative analysis included descriptive statistics, Pearson's r correlational tests, and parametric tests for between-group differences in EBP beliefs, organizational readiness, EBP implementation, nurses' retention, nurses' intent to leave, group cohesion, and job satisfaction. Because the electronic survey collection method (i.e., Survey Monkey) did not include identifiers, it was not possible to pair pre-test and post-test responses. A conservative method was used to examine mean differences in the variables of interest, where scores were arranged so as to maximize the negative pairwise relationship across time and to perform a repeated measures analysis (Time X Group). Pretest scores were ranked in ascending order and those from the post-test were ranked in descending order. Ranking occurred within both workshop and non-workshop groups. Substitution of the individual mean was used to impute data for respondents who missed two or fewer responses on the multi-item scales that were comprised of 6 or more questions.

RESULTS

Focus Group Findings

Clinical specialists had the most knowledge of EBP, followed by the nurse managers. Clinical Practice Council (CPC) members were fairly consistent in stating that EBP meant "not a whole lot" and that it did not exist in the department; however, they stated that they were hoping to incorporate it more. Both CNS and Practice Council members said that bedside nurses might be resistant and would perceive that EBP was not necessary unless it was applicable to their practice. All three groups believed that leadership support of a culture for EBP and the dedication of resources for sustainability of the initiative needed to be a priority for engaging staff at all levels. CPC members also stated that the existing model of shared governance would promote the sustainability of this effort. Participants emphasized that all success would include a grassroots initiative and administrative initiative, and not just involvement of CNSs or nurse managers.

Survey Results

Survey participants (N=159) were mostly female (n=121); between the ages of 41–50 (n=121); White (n=96); had worked for longer than three years in their current positions (n=60); and had previously been exposed to EBP in nursing school or through continuing education (n=84) (Table 1).

Pearson's r correlations were used to assess relationships among the study variables. As seen in Table 2, organizational culture and readiness for EBP were related to multiple variables. Specifically, as perceived organizational culture and readiness increased, there were increases in EBP beliefs, group cohesion, job satisfaction and intentions to remain in the

nursing profession. In addition, as organizational culture and readiness increased, intention to leave current roles decreased. Evidence-based practice beliefs were also positively correlated with EBP implementation (r = .36, p < .01).

Statistically significant differences were found at follow-up on perceived Organizational Culture/Readiness for EBP and EBP Beliefs between those attending the EBP mentorship programme as compared to those who did not attend. Participants of the programme had a larger increase in perceived organizational culture and readiness for EBP as compared to those who did not attend (77.2 to 89.5 vs. 80.9 to 82.9; F=5.09, p=.025). Combined EBP culture and readiness scores for the entire sample increased from 78.7 to 86.9 (F=9.55, p=.002). Those who attended the EBP mentorship programme had a larger increase in EBP Belief scores as compared to those who did not attend. Scores for those attending increased by 7.4 points, whereas scores for those who did not attend increased by 0.2 points (57.2 to 62.6 vs. 58.0 to 58.2; F=5.09, p=.025). For those who attended the workshop, EBP Belief scores increased significantly after the workshop from 57.5 to 60.8 (F=5.65, p<.001).

DISCUSSION

Study Limitations

Generalizability of the results of this study is limited because the EBP Mentorship Programme group was a non-random sample that was restricted to nursing leadership and shared governance staff leaders. In addition, once the sample was selected random assignment was not used to assign participants to the mentorship or comparison groups, which threatens the internal validity of the study. Attrition from the pre- to the post-intervention survey also was substantial, which again threatens the internal validity of the study.

Effects of mentorship

Mentorship is commonly accepted in the nursing literature as a positive strategy for bringing nurses into a new system, supporting them while practice changes take place, and increasing not only the quality of their care but also scholarly productivity (Barker 2006, Greene and Puetzer 2002, North et al. 2006). Findings from our study indicate that participating in an EBP mentorship programme that consists of a an intensive 2-day workshop, a follow-up consultation booster with individual project teams, and continued EBP skills-building activities over a 7-month period has positive effects on nurses' perceptions of EBP organizational culture and readiness for EBP, their EBP beliefs and EBP implementation, and on their level of job satisfaction, group cohesion and intent to stay in their organization.

These findings corroborate others showing that EBP beliefs of nurses are significantly correlated with EBP implementation, and that having an EBP mentor leads to stronger beliefs and greater EBP implementation by nurses, as well as greater group cohesion, which is a potent predictor of nursing turnover rates (Melnyk et al. 2004).

The financial investment made by the organization was viewed by those in the focused discussion groups as a positive cultural indicator of the value of EBP. Although actual turnover rates were not collected, nurses' intent to remain in the profession and not leave their roles reflects potential cost savings. Organizations are often concerned about return on investment, particularly with increasing demands on existing financial resources. While there is a cost to cultural change, the return on investment could be realized by the retention of nurses alone. The improvement in patient outcomes that would be anticipated with EBP mentors in place would give even greater potential cost savings. Future studies that implement EBP frameworks such as the ARCC model need to include a cost component and

patient outcomes (e.g., reduced length of stay, decreased infection rates) to evaluate these potential savings.

Data from this study provide additional support for relationships within the ARCC Model (see Figure 1). Organizational mentors were central in the implementation of EBP and the movement toward a sustained EBP culture. Combining skill-building for mentors and department-wide and unit based initiatives for staff were key to building beliefs and increasing EBP implementation. With this culture shift, increased job satisfaction and group cohesion may follow and nurses will remain in their roles. These findings further support the evidence of the key role of EBP mentors for sustainable change (Melnyk 2007). In an era of severe nursing shortage crisis, investing in the development of nurses as EBP champions and mentors could not only improve the quality of care through improved clinical practice, but also lead to greater nurse satisfaction and less turnover rates resulting in substantial cost savings for healthcare systems (see Table 3).

CONCLUSION

Despite the design limitations of this study, findings indicate that an EBP Mentorship Programme comprised of a series of intensive workshops with ongoing EBP skills building activities can have positive effects on nurses' perceptions of organizational culture, their EBP beliefs and implementation, as well as job satisfaction and intent to leave their profession. There is a need however, for replication of this study in other practice settings, since differences across international educational systems, service delivery models and organizational structures may influence results. It may be, for example, that particular service delivery models and interdisciplinary team structures promote or limit effectiveness of EBP mentors in sustaining an EBP culture and in shifting EBP beliefs and implementation. Replication in other settings where the organizational culture is thoroughly described would be helpful in determining if the ARCC mentorship model and our findings hold across international settings and organizational cultures.

SUMMARY STATEMENT

What is already known about this topic

- Evidence-based practice is a problem-solving approach to the delivery of healthcare that integrates the best evidence from research with a clinician's expertise and a patient's preferences and values.

- In an organizational culture that promotes best practices, evidence-based practice is associated with higher quality care and better patient outcomes than care that is steeped in tradition

- The integration of evidence-based practice implementation into daily clinical practice remains inconsistent, and the chasm between research and bedside practice remains substantial.

What this paper adds

- Participation in an evidence-based practice mentorship programme had positive effects on nurses' perceptions of their evidence-based practice organizational culture and readiness for evidence-based practice, their evidence-based practice beliefs and evidence-based practice implementation.

- Leadership support of a culture for evidence-based practice and the dedication of resources for sustainability of the initiative need to be priorities for engaging staff at all levels.

Implications for practice and/or policy

- A multifaceted evidence-based practice mentorship programme may have lasting positive effects on nurses' perceptions of organizational culture, their beliefs about evidence-based practice and its implementation into practice.

- In an era of severe nursing shortages, investing in the development of nurses as evidence-based practice champions and mentors may not only improve the quality of care through improved clinical practice, but also lead to greater nurse satisfaction and lower turnover rates, resulting in substantial cost savings for healthcare systems.

Acknowledgments

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Figure 1.
The **A**dvancing **R**esearch & **C**linical Practice through Close **C**ollaboration (ARCC) Model

Table 1

Baseline Demographics

	N	*%*
Sample		
Participants	159	
Number in the EBP implementation group	94	59
Number in the non-EBP implementation group	65	41
Current position tenure		
Staff Nurses	51	33
Charge Nurses	16	10
Clinical Educators	16	10
Nurse Manager	10	6
Clinical Manager	11	7
Clinical Specials	11	7
Nurse Researchers	9	6
Nurse Executives	4	3
Nurse Consultant	14	9
Institute Nurse	7	4
Non-nurse	7	4
Number of years in the Position		
Less than 1 year	16	13
1 to 3 years	46	38
3.1 to 6 years	27	22
6.1 to 12 years	19	16
Greater than 12 years	14	11
Highest Educational Qualification		
Doctorate	6	4
Master's	52	38
Bachelor's	70	52
Associate	6	4
Diploma	3	2
Work Schedule		
Day Work Shift	125	94
Full-time	126	93
Gender		
Women	121	90
Age		
41–50 years	51	38
Greater than 50 years	45	34
Race/Ethnicity		
White	96	73
Exposure		

	N	*%*
Exposure to EBP in Nursing School	44	34
Exposure to EBP in Continuing Education	40	31
Do not know much about EBP	57	44

The sample size varies as a function of missing data.

EBP= Evidence-based practice.

Table 2

Relationships Among Organizational Culture and Readiness for Evidence-based Practice (EBP) and Other Study Variables at Baseline.

Variable	Organizational Culture and Readiness for EBP
Nurse Retention Index	.27[**]
Group cohesion	.36[**]
Intent to leave	−.24[*]
Job satisfaction	.29[**]
EBP beliefs	.56[**]

[*]
p < .05;

[**]
p < .01

Table 3

Comparison of the Means & Effect Sizes for Key Outcome Variables for Nurses Receiving the Evidence-based Practice (EBP) Mentorship Program and Those Not Receiving the Program (Comparison)

Variable	Pre-EBP Mentorship Program		Post EBP Mentorship Program		Pre-Comparison Group Mean		Post-Comparison Group Mean		Effect Sizes for Post Scores
	N	Mean (±S.D.)	N	Mean (±S.D.)	N	Mean (±S.D.)	N	Mean (±S.D.)	
EBP Beliefs	91	57.2 (8.9)	56	62.6 (8.9)	57	58.0 (9.3)	40	58.2 (7.8)*	.52++
Organizational Culture & Readiness	88	77.2 (18.5)	55	89.5 (13.1)	58	80.9 (17.9)	37	82.9 (16.8)	.44+
EBP Implementation	86	34.3 (13.9)	54	40.9 (16.9)	52	29.7 (8.9)	35	32.7 (11.9)	.57++
Job Satisfaction	88	29.1 (5.5)	55	29.9 (3.8)	52	28.9 (4.4)	55	28.5 (4.5)	.34+
Group Cohesion	87	11.5 (2.7)	56	12.1 (1.7)	52	11.5 (2.5)	37	11.1 (2.9)	.43+
Nurse Retention Index	87	31.5 (5.2)	55	32.2 (3.6)	51	32.2 (3.7)	37	31.7 (3.5)	.13
Intent to Leave	87	3.3 (2.4)	53	2.9 (1.3)	52	3.8 (2.6)	35	4.5 (3.0)	.74++

*
p < .05

+ indicates a small intervention effect;

++ indicates a medium intervention effect