

The Impact of Journal Clubs on Intensive Care Nurses' Self-Report of Implementing
Evidence into Practice

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Abstract

Evidence-based practice (EBP) has been shown to reduce errors and improve patient outcomes with reductions in morbidity and mortality. Studies have also shown that not all nurses are using the latest evidence in their patient care. The barriers to the use of EBP include deficits in education, using outdated practices, and lack of discrediting of the outdated modes of practice. A quality improvement project was conducted to determine if journal clubs (JC) are a useful method of enhancing nurses' self-reports of implementation of evidence into practice. Journal clubs were offered to nurses in two intensive care units (ICU). Both ICUs had comparable patient populations, bed capacity, staff age and level of experience. The JCs met once a month for a two-month period. The participants were asked to answer the EBP Implementation Scale (EBPIS) questionnaire before meeting and again two weeks after the club meeting to determine if the participating nurses (N=21) reported applying evidence to practice. The 18-question EBPIS pre- and post-test JC scores were compared. Only three (16.6%) of individual questions' mean post-test scores showed statistically significant improvement over the pre-test mean scores. However, the mean post-test EBPIS score (32.7) for all participants showed statistically significant ($p=0.0029$) improvement from the nurses' total EBPIS mean pre-test score (29.3). The results of this quality improvement project indicate that JCs may be an effective means of increasing ICU nurses' implementation of EBP.

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The Impact of Journal Clubs on Intensive Care Nurses' Self-Report of Implementing Evidence into Practice.

Introduction

Evidence based practice (EBP) has become the standard expectation for all practitioners in healthcare today. Educational programs now include EBP as part of their curricula and practitioners are expected to keep current with the latest evidence, which are reflected in continuing education requirements post-licensure or certification. Healthcare facilities have been expected to implement EBP as recommendations geared toward patient safety as recognized and supported by the Institute of Medicine (IOM; 2000). Healthcare facilities are further encouraged to support staff in implementing EBP with education on evidence and access to databases (IOM, 2001). But healthcare in general and nursing in particular has not always had EBP as a driving force for improved quality of care.

For the past 100 years, nursing has been generating evidence by conducting research and publishing the results, but evidence generated often remains academic. In the 1970s, when nursing leadership found that the results of most research were not being utilized in practice, the research utilization movement began (Brown, 2009). Research utilization often focused on the implementation of the results of one study (Brown, 2009). Later, in the 1990s, partially due to government funding toward the implementation of research into practice, several disciplines, especially medicine and nursing, intensified their EBP efforts (Brown, 2009). However, there is still a significant time lag from research results to implementation (Tribbles & Sanford, 1994), with a current average of seventeen years' delay (Morris, Wooding, & Grant, 2011).

The nature of EBP has changed over the years, expanding from the definition of utilization of research findings from a single study to include the search and critique of pertinent research results, quality improvement project outcomes, clinical expertise, and patient preference (Melnyk & Fineout-Overholt, 2011). Although EBP does have a major

component of implementing research findings, it differs from what is commonly called research utilization. Research utilization often has one study as a source. Conversely, EBP gives preference to systematic reviews or multiple studies (Melnyk, Fineout-Overholt, Stone, & Ackerman, 2000).

There can be several ways to determine the level of evidence, but most sources agree that systematic review or meta-analysis of multiple randomized controlled trials (RCT) as the highest level of evidence. A systematic review collects data from multiple individual studies to compile evidence to answer a clinical question. A meta-analysis will utilize statistical analysis of multiple individual studies to compile stronger evidence. The systematic review and meta-analysis are followed by a single RCT in the hierarchy of evidence. This is then followed by cohort studies. A systematic review of qualitative studies, individual qualitative studies are lower on the evidence hierarchy, with expert opinion and manufacturer recommendations at the lowest level of evidence (Brown, 2009; Melnyk & Fineout-Overholt, 2011; Peterson et al., 2014). The evaluation of the levels of evidence, coupled with critical appraisal, is an important step in determining whether the study recommendations should be incorporated into practice (Peterson, et al., 2014). This evaluation and appraisal helps to avoid practice change based on only one study that may be faulty and/or with limited generalizability. The combined evidence may then be compiled into bundles or guidelines for EBP (Brown, 2009).

Once implemented in a healthcare facility, EBP leads to improved patient outcomes (Reigle, et al., 2008). EBP contributes to improved patient safety, nurse to patient ratios, and quality of care (Talsma, Grady, Feetham, Heinrich, & Steinwachs, 2008). Results of various studies of differing evidence-based interventions have shown that patient outcomes are improved with a reduction in length of stay, improved treatment for pain, and hypertension (Cleary-Holdforth, 2009). Even in the early years of EBP, meta-analysis of 84 studies showed

significantly improved outcomes in post-operative patients, cardiac patients, nephrology, and psychiatric patients in areas of knowledge, behaviour, physiological, and psychosocial categories (Heater, Becker, & Olson, 1988). These categories were based on evidence based nursing interventions compared to what the authors called routine nursing care. Later studies also show that implementation of EBP decreases mortality, morbidity, and length of stay in internal medicine patients (Emparanza, Cabello, & Burls, 2015). Additionally, EBP promotion is one of the requirements for healthcare facility qualification for the prestigious Magnet designation (Reigle, et al., 2008). Evidence-based practice is recognized as an integral part of the healthcare system and nursing in particular. The IOM report on “quality in healthcare has” already brought many changes to the healthcare system. In addition, the IOM calls for increased transparency with EBP implementation, institutional support- including access to clinicians and patients, teaching EBP, and related quality measures (IOM, 2001).

Problem

Although the purpose of EBP in nursing is to ensure that all patients receive the most current, best possible care leading to improved outcomes, there are still significant numbers of patients who do not receive the latest evidence-based care (Rauen, Chulay, Bridges, Vollman, & Arbour, 2008). Evidence-based practice is based on scientific evidence derived from research rather than how practice has been conducted in the past (Luby, Riley, & Towne, 2006). However, even when evidence is available, it may not be applied by every nurse or applied consistently and there are known barriers to the implementation of EBP (Hanrahan, et al., 2015).

Some nurses still have the tendency to base practice on intuition and the manner practice was conducted in the past (Makic, VonReuden, Rauen, & Chadwick, 2011; Rauen, et al., 2008). Hanrahan, et al. (2015) found continued use of traditional, outdated practices and old habits to be significant barriers to EBP. However, this is more complicated than it may

seem as studies have shown more depth to the tradition barrier. For example, resistance to integrating new evidence in individual practice is often due to lack of understanding the new evidence, which is contradictory to what nurses were taught in the past (Rapp, et al., 2010).

Related to continued use of old evidence or tradition, failure to de-implement the old behavior is an important consideration (Harvey & McInnes, 2015). The removal of outdated practices has been noted as an important step in the establishment of EBP initiatives to ensure that practice does not revert to the previous behavior (Harvey & McInnes, 2015; Hanrahan, et al., 2015).

Another known barrier is nurses' lack of confidence in their ability to appraise research articles (Brown, Wickline, Ecoff, & Glaser, 2008). This knowledge deficit may be considered an organizational barrier (Brown, et al., 2008) as it is related to educational support. Closely related to this organizational barrier is lack of knowledge that new evidence exists, and how to find the relevant literature (Brown, et al., 2008; Solomons & Spross, 2011). The IOM recognized the lack of implementation of EBP as a nationwide problem and has made many recommendations to decrease these barriers and improve the quality of care. One of the IOM's recommendations that dealt directly with this problem called for structural changes to support EBP implementation (IOM, 2001).

There are other barriers to EBP implementation, such as lack of autonomy, when administration and physicians do not support nursing practice change (Brown, et al., 2008) and lack of educational support from supervisory personnel (Rapp, et al., 2010). These barriers associated with a knowledge deficit are significant and the removal of the educational barriers may be a starting point in moving toward increased implementation of EBP. The IOM recommendations also consist of education and increasing access to the evidence databases, including Cochrane Library, National Guidelines Clearinghouse, and the American College of Physicians (ACP) JC (IOM, 2001). The ACPJC is a group physicians,

researchers, and clinical editors that evaluates research evidence for clinical application and scientific rigor, giving the studies a clinical rating and publish the results in the journal *Annals of Internal Medicine* (American College of Physicians, 2016).

Evidence-based practice has been shown to improve the quality of care and patient outcomes, but is not being utilized to the greatest potential. Finding a way to bring about improvement in this quality issue is essential. The focus of research is the discovery of new knowledge, whereas quality improvement is focused on the application of existing evidence (Mold & Peterson, 2005) and the creation of a questioning attitude among staff is the first step in continuous quality improvement (National Learning Consortium, 2013). Journal clubs may be an effective strategy for decreasing the barriers above to the implementation of EBP among healthcare providers in order to improve the quality of care.

Background

Journal clubs as a method of education date back to 1875 when Sir William Osler organized a JC for medical students at McGill University (Linzer, 1987). More specific to nursing, a JC can be defined as a group of nurses who meet to appraise the current evidence based literature and discuss its application in clinical practice (Sciarra, 2011). The use of JCs in nursing can take place in different venues; undergraduate or graduate nursing education programs, unit-based inpatient nursing specialties, or online (Steenbeck, et al., 2009). The structure of JCs can also be varied, meeting weekly, monthly or quarterly, depending on needs and the overall goal of the club (Deenaadayalan, Grimmer-Somers, & Kumar, 2008). The subject of the JC, depending on the practice needs of the unit, is announced before the meeting, typically a week or two prior, to allow for preparation with the facilitator supplying the selected studies (Dobrzanska & Cromack, 2012). The process may also involve staff nurses developing a question regarding the practice to be discussed in the JC, then searching

the literature for the additional evidence on the subject, bringing those articles to the JC and presenting the evidence to the group (Wiggy, 2012).

The agenda usually includes, but is not necessarily limited to, a review and critique of each article with questions such as whether the study design is appropriate to the question, the main findings, the generalizability of the findings, and any limitations (Baker, 2013). Also of importance is relevance of the article to the practice of those involved (Baker, 2013).

Kirchoff and Beck (1995) and Baker (2013) advise that the discussion of only one article is not sufficient to change practice. Although the review of one article carries the advantage of less time to prepare, the search of all retrievable studies on a given topic is needed to have enough evidence to avoid changing practice erroneously (Kirchoff & Beck, 1995). After a critical evaluation of the evidence, the JC participants then may discuss how the findings can be implemented into practice culminating in recommendations for practice change.

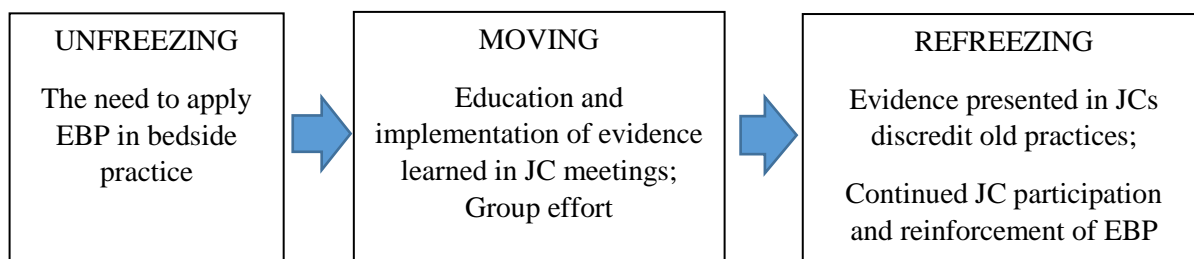
Theoretical Framework

The participation of bedside nurses in JCs serves several purposes, but especially to bring change by improving the quality of care in the area of practice involved. More specifically, change in practice involves the uniform utilization of EBP. Lewin's Model of Change (Figure 1) can be applied as a theoretical model to this process. Lewin, a social psychologist, developed his model to describe the phenomenon of social change. This theory has since been used in business to aid change during periods of stability (Burnes, 2004). Lewin (1947) describes social change as a group endeavor and that individuals have defense mechanisms impeding change. This resistance is more easily overcome by focusing on a group rather than individual effort (Lewin, 1947). This model of change consists of a threefold process that includes unfreezing, moving, and refreezing (Kritsonis, 2005).

The first stage, unfreezing, involves a recognition that change is needed (Burnes, 2004). The time before the change, the unfreezing stage, is a period of inertia, which must be

overcome in order to implement any change (Lewin, 1947). The unfreezing requires additional force if a previous, undesired behavior is part of the change involved (Lewin, 1947).

Figure 1 Application of Lewin's Model of Change



This is especially important in the instance of implementing a new behavior such as EBP. The additional unfreezing force to which Lewin refers could take the form of increased education in the clinical setting. Burnes (2004) agrees with Lewin (1947) that the second phase of the change, moving, is completed with less resistance if completed as a group effort. Lewin (1947) describes this in detail as the additional social force that propels the group in the common direction. The individual may vary from the group norm, but in most cases will not deviate to an extreme. The initial inertia encountered when the entire group is manifesting undesired behavior can best be overcome by discrediting the offending behavior (Lewin, 1947). Therefore, the greater participation of mass effort in a given change results in decreased hostility toward the said change and as the group advances to a higher level the individual will conform to the new group standard (Lewin, 1947). Continuing to reinforce the group commitment to the change results in the third phase, refreezing, or the establishment of the new behavior as the group norm (Lewin, 1947).

Since some nurses may not be using the latest EBP in their practice (Melnyk, et al., 2012; Hanrahan, et al., 2015; Makic, et al., 2011; Rauen, et al., 2008) the recognition of the need to change this situation corresponds to Lewin's stage of unfreezing. The undesired behavior in question is the use of outdated methods of clinical practice. To overcome this, the

additional force used is the education that dispels or discredits the outdated practice. These are all steps in the unfreezing stage. The method of employing JCs complies well with Lewin's theory of change. Journal clubs involve the participation of bedside nurses as a group in the process of practice change, as all nurses are encouraged to participate (Bilodeau & Pepin, 2012). The evidence evaluated and the recommendations made during the JC meetings would hopefully be the components of moving, or the change itself. This will vary according to the subject matter of each meeting, but the process remains the same. Continued JC participation and dissemination of evidence may be beneficial to maintaining the use of evidence in practice and avoidance of reversion to previous practice behaviors, or refreezing.

In summary, there is an unquestionable need for measures to improve the quality of care by ensuring that EBP is implemented at the bedside. Evidence-based practice is a key component of modern healthcare and is particularly important in nursing where EBP is not implemented in a consistent manner. Some of the barriers to EBP implementation have been shown to be related to a lack of education and JCs have been used in education for more than a century. The manner in which JCs are conducted is supported by Lewin's change theory leading to the question for a literature search: Does the implementation of nursing JCs result in an improvement in EBP among participating nurses?

Literature Review

A review of the literature was conducted to ascertain what studies have been done to support the use of JCs in the nursing inpatient setting. Utilizing the databases CINAHL, Ovid Medline, Google Scholar, Psych Info, and ERIC a search was conducted using the keywords journal club, nursing, nursing practice, research critique, and evidence-based practice. These terms were used with the Boolean limiter.

The inclusion criteria for the review were studies of JCs with clear outcome measurements, the inpatient nursing setting, and summary review articles of research

addressing JCs. Exclusion criteria were editorial or opinion articles, studies of JCs in nursing education settings, and studies that did not have any measurement of outcomes.

Using these inclusion and exclusion criteria, Psych Info returned no results. ERIC returned 20, of which only one was retained. Ovid Medline returned seven results, of which two were retained. CINAHL returned 359 results of which only three were retained for review. No articles were retained from Google Scholar. There were no RCTs and no blinded studies.

Concentrating on studies with clear outcomes, many of the articles that were discarded discussed the establishment of a JC, discussion of JCs in general, were related to other disciplines, or were editorials. Most of the articles on CINAHL that used the keyword 'journal club' were articles for the in-journal journal discussion rather than in practice. Articles that reported the results of a particular journal club discussion were also discarded. Articles discussing nursing students or nursing school curricula were also excluded, as inpatient nursing is the focus of this review. An ancestry search of the review articles reference lists was conducted, and two more studies were obtained resulting in six studies and two review articles for the final review. A summary of the eight articles is provided in Appendix A.

Review Articles: Analysis of Results

LaChance (2014), analyzed twenty articles, including two editorials, two anecdotal articles, and eight theoretically based articles that focused on JCs as a teaching strategy, four qualitative and three quantitative research articles, and one theoretical article. The levels of evidence of the articles reviewed by LaChance was relatively weak, with only three quantitative studies included. LaChance asserts that JCs kept nurses current in the latest literature, that involvement in these discussions help nurses to develop critical appraisal skills in reading research articles. A third benefit was that JCs help nurses to learn EBP, but made

no mention of whether this new knowledge was incorporated into practice. The greatest hindrance to operating JCs was promoting participation, and low attendance. (LaChance, 2014).

A systematic review by Honey and Baker (2011) discussed nursing JCs in school curricula as well as inpatient settings. Only sixteen articles, all qualitative studies, were reviewed. The findings on inpatient clinical settings were limited, and the qualitative design of the studies reviewed provided weak evidence, but the findings support that JCs do improve “knowledge, skills, and behaviors in the workplace” (p. 829). Also of note, critical thinking was improved. The authors recommend that a system be established to measure outcomes in these settings (Honey & Baker, 2011).

Wilson et al. (2015), conducted a quasi-experimental pilot study at an 898-bed Magnet facility. A multidisciplinary JC was studied with convenience sampling and a pretest-post-test. The pretest was administered before initiation of JC meetings and the post-test was after eight weeks, using the Evidence-Based Practice Capabilities Beliefs Scale (Wallin, Bostrom, & Gustavsson, 2012). The findings demonstrated significant improvements in EBP utilization in the eight-week period, with 90% improvement in staying current with the latest evidence and a 76% improvement in learning to apply evidence into practice. The limitations were reported to be attrition and waning participation over time. The authors recommend future development and study of online formats to improve attendance (Wilson, et al., 2015).

Sciarra (2011) carried out a quasi-experimental pilot study of an ICU-based JC with pretest- post-test format utilizing the EBP Beliefs Scale (Melnik, Fineout-Overholt, & Mays, 2008). Seven participants attended the JC for four weeks, meeting once a week. Statistical analysis demonstrated significant ($p < 0.01$) improvement in nursing perceptions of EBP from pre-test to post-test. Evidence-based projects were also initiated after the JCs ended. The

authors recommend further study on alternate methods of delivery of JCs, such as online, and the importance of replicating the study with a larger sample size (Sciarra, 2011).

A multi-disciplinary JC, with participants from nursing, occupational and physical therapy, research, laboratory, hospital administration, and medicine was studied by Fowler, Gottschlich, & Kagan, (2013) using a qualitative design with post-test questionnaire format. The mean attendance was twenty-nine participants and twenty-four meetings over two years. The authors reported that the respondents found that the articles applied to practice, increased their medical knowledge, and improved their critical thinking. This study did not evaluate the application of this knowledge into practice.

O'Nan (2011) conducted a quasi-experimental study utilizing a pretest- post-test format at a two hundred sixteen-bed facility to determine changes in JC participants' perceptions of barriers to research. The evaluation instrument was Barriers to Research Utilization Scale (Rogers, 1983) a tool validated by the content of Research Questionnaire used in the Conduct and Utilization of Research in Nursing Practice Project (Funk, Champagne, Wiese, & Tornquist, 1991). The Barriers scale is a 28 item self-report questionnaire on the perceptions of participant on ability to apply research, organizational characteristics, the qualities of the research, and accessibility to the research. Weekly JC meetings were conducted for ten weeks with fourteen participants. The results showed an increase in the perception of barriers to research utilization on the innovation subscale of the instrument and a decrease in the organizational subscale. The barriers tested in the innovation subscale included research conducted in the articles discussed in the JC were not replicated. The barriers in the organizational subscale included physician staff not cooperative with the practice change, lack of nursing authority to make the practice change, lack of time to make the practice change, and the results of the research not generalizable to the practice setting. This increased perception of barriers to innovation, specifically the identification of weak

evidence and the decrease in perceptions of organizational barriers to EBP were interpreted as an improvement in critical thinking after JC participation. Critical thinking, ability, and confidence in the interpretation of research articles is especially important as these have been identified as barriers to EBP (Kleinpell, 2002; Brown, et al., 2008). The main limitation of this study was poor attendance, but might have been related to meetings falling on major holidays (O'Nan, 2011).

Bilodeau and Pepin (2012) conducted a qualitative study in a twenty-two bed intensive care unit. The JC was a twelve-week project, with the first two weeks dedicated to the organization and development of the JC, and the remaining ten weeks for article discussion. The JC met twice a week to ensure opportunity for all nursing staff to attend a meeting. The same articles were reviewed at each meeting and each meeting had a mean attendance of fifty nurses. A questionnaire with open-ended questions was given at the end of each meeting, asking whether there was sufficient time allotted to discuss the articles, if JCs facilitated learning from colleagues, and what the participant felt was the impact of the JC meetings. The respondents reported an increase in their clinical knowledge of the subjects discussed during the JC meetings, in some cases based on their learning from each other (Bilodeau & Pepin, 2012).

Nesbitt (2013) reports on a two center qualitative study of twelve meetings of JCs at large university medical centers. The results were measured by interviews, focus groups, field notes, surveys, review of staff meeting minutes, and interview with other healthcare professionals. The results showed increased confidence in reading research articles and a community of practice developed, with increased awareness of EBP and group goal of improving practice. Also noted was that, through field observations, more conversation about practice and EBP was occurring on the units. (Nesbitt, 2013).

Many of the articles stated that JCs do have an impact on nursing confidence in reading research and keeping current with the latest developments. This alone does not imply that JCs have an impact on practice. However, knowledge of the evidence is a starting point. Nesbitt (2013) states that the main impact of JCs is that a more inquisitive mindset is developed over time in participants. All of the reviewed articles state critical thinking is strengthened by JC participation and many of the articles reviewed stated that clinical knowledge is also improved. Patel et al. (2011) showed how a journal club tied with a policymaking body can very quickly implement changes in practice. The literature does support the hypothesis that JCs can have a positive influence on nursing appraisal of the literature (LaChance, 2014), may have an impact on nursing behaviors (Honey & Baker, 2011), improved critical thinking (Fowler, Gottschlich, & Kagan, 2013), and increased learning (Bilodeau & Pepin, 2012), but there is limited strength in the available evidence. Of all of the articles analyzed, only three consisted of quasi-experimental design and of the two review articles, Honey & Baker (2011) reviewed only qualitative studies and LaChance (2014) examined only three quantitative studies out of 20 articles reviewed, representing weak evidence. Little research has been conducted on JCs with measurable outcomes on implementation of EBP. However, as many of the barriers to EBP are behavior related, the impact of JCs on nursing behaviors may be an important factor in EBP implementation. The literature does reveal benefits of JC participation, as well as recommendations for further research. However, there remain unanswered questions regarding the impact of JCs on quality of care.

Quality Improvement Project Question

The literature does show weak evidence that JCs improve participants' confidence in reading research articles and improve knowledge, but no research has been conducted in the area of application. There is a definite need for discovery of effective methods to ensure that EBP is

applied in the clinical setting. Journal clubs may be beneficial as an educational method and help to improve the quality of care. As JCs involve a commitment of nurses who may otherwise be engaged in patient care, the question of whether JCs actually can improve the implementation of evidence into practice becomes relevant. Therefore, the investigational question addressed by this quality improvement (QI) project is: What is the impact of JC participation on ICU nurses' self-report of implementing EBP?

Purpose

Because the study of the actual impact of JCs on nurses' implementation of EBP is beyond the scope of this QI project, the purpose was to evaluate whether JCs have an impact on the self-reported implementation of EBP into bedside nursing practice.

Methods

This QI project involved the establishment of two nursing JCs, which were evaluated with a pre-test and post-test by the participating nurses to determine whether there were any changes in their self-report of implementation of evidence into practice.

Setting and Sample

A JC was established in a medical intensive care unit (ICU) at two mid-Atlantic academic medical centers. These two ICUs both have twenty-eight beds and serve similar patient populations, with critical medical illnesses such as septic shock, liver failure, and respiratory illnesses such as acute respiratory failure, obstructive and restrictive pulmonary disease. The patient to nurse ratio of both ICUs is two to one. The scope of practice, and age and level of experience of nursing staff is similar at both facilities and, both facilities are university teaching hospitals with Magnet designation.

The convenience sample consisted of ICU nurses in each unit. The inclusion criteria were being a practicing registered nurse in the ICU and voluntary participation. The exclusion criteria were nursing students, nurses working in any setting other than ICU, and

non-nursing healthcare professionals such as care partners, respiratory therapists, and physicians as the focus of the QI project was ICU nurses. The JCs were held in the conference room of each ICU.

Procedures

The time and place of the JC meetings were announced in a mass email to the registered nurses of the respective ICUs. Posters announcing the date, time, and location were also placed in the respective ICU break rooms. Over a two-month period, two JC meetings were held at the two ICUs on day shift, plus one meeting on the night shift in one of the ICUs. Thus, five individual JC meetings were held. This was to ensure that the nurses could attend at meal times for optimal participation.

Each meeting lasted approximately thirty minutes. The articles were provided by the facilitator two weeks before the meeting date identified in the mass emails. The articles were also available on the respective units in hard copy. The facilitator was the investigating Doctor of Nursing Practice student.

The number of articles discussed at each meeting averaged five as recommended for JC meetings (Baker, 2013). The ICU leadership, Clinical Nurse 4s and nurse clinicians, recommended care bundles as the subject matter for the first meeting, using articles by Guerin, et al. (2010), Garside, et al. (2013), Tayyib et al. (2015), Clarkson (2013), Crunden, et al. (2010), and McClarigan, et al. (2014). The staff participating in the meetings chose the subsequent meeting topics focusing on enteral feeding, care bundles, ultrasound guided peripheral IV insertion, and early mobility. A search for the articles was conducted by the investigating Doctor of Nursing Practice student. Editorial and opinion articles were excluded, with preference given to meta-analyses or systematic reviews, randomized controlled trials or descriptive studies. The enteral feeding articles used were Swanson and Winkelman (2001), McClave et al. (1999), Stewart (2014), Metheny (2011), and DiLibero et

al. (2015), and the articles used for the discussion on early mobility included Schweichert et al. (2009), Winkelman et al. (2011), Bassett et al. (2012), and Bahadur (2008). The articles covering the topic of ultrasound guided peripheral intravenous access included Arbique et al. (2014), Mahler et al. (2010), Blaivas (2005), Nelson et al. (2014), and Gregg et al. (2010). The subject matter chosen was nursing practice specific to avoid the need for committee or administrative approval for any subsequent implementation of the evidence into practice.

After the nurses had arrived in the conference room, scripted information (Appendix B) was provided regarding the purpose and procedure of JCs and that the QI project consisted of a pre-test, and the JC meeting, and post-test after two weeks. The nurses were then asked if they would like to participate in the project and those who agreed to participate signed the informed consent form (Appendix C).

After the participants signed the informed consent form, the EBPIIS was administered, followed by a discussion of the articles. The structure of the discussion consisted of a critique of each article for the level of evidence and strengths and weaknesses. The dialogue continued with brief summaries of each article's content. The group then asked to explore ways the findings of each article could be implemented in current practice. A list of recommendations was then composed and forwarded to the ICU leadership for consideration. Two weeks after the initial meeting, the EBPIIS was again distributed to the participants in person and by email. The EBPIIS asks the participant to answer each item based on their activities the prior eight weeks. However, no rationale for the eight weeks was provided in the original EBPIIS study and due to time constraints, the post-test was given to the project participants two weeks after the JC meeting.

Protection of Human Subjects

No identifying information of the participants was retained. Informed Consent was obtained from each participant prior to the first JC. Participants were assigned randomly

generated identification numbers for pairing the pretest and post-test questionnaires. The random numbers were generated using EXCEL software data pack, random number generator. After completion of the pretest, a key with the participants name and identification number was written on paper to facilitate the pairing with the post-test. After the two-week period, participants were given the post-test with the appropriate random code. No private information, information regarding participation in the study, or demographic information was retained, and the key for the identification codes was destroyed at the end of the project.

The participants were informed that enrollment in the project had no impact on employment, salary, and participants were not paid for participation. Supervisors were not informed which nurses participated. Institutional Review Board (IRB) approval was granted by both university medical centers (Appendix D).

Measures

A demographic data form was used to collect the participants' age, gender, years of nursing experience, and level of education (Appendix E). Both age and education level have been found to be significant factors in nurses' self-report of EBP implementation (Melnyk et al., 2008).

The Evidence Based Practice Implementation Scale (EBPIS; Melnyk et al., 2008; Appendix F) was used to evaluate the participants' perceived used of EBP both before and after their JC experience. Permission to use the EBPIS was received from the authors (Appendix G). The scale is an eighteen-item questionnaire with responses on a five-point Likert scale. Responses to the Likert scale reflect how frequently the participant has performed the item specified in the question in an eight-week period. A response of "1" indicates no times, a "2" indicates fewer than three times, "3" indicates 5 times, "4" indicates more than five times but fewer than eight times, and "5" indicates more than eight times.

There was no option to respond for “4” times on the EBPIIS. The possible score of the EBPIIS, providing all questions are answered, range from a low of 18 to a high of 90.

The EBPIIS was developed from a theoretical model, comprehensive literature review, and a 52-item survey developed and studied by the researchers (Melnyk et al., 2008). The EBPIIS has good reliability (internal consistency) confirmed by Cronbach alpha of 0.96 and Spearman-Brown r of 0.95. Criterion validity was established through subgroups studied. An example is the statistically significant ($p < 0.001$) difference in mean EBPIIS scores between nurses having prior EBP exposure ($M = 18.27$) and nurses with no prior exposure to EBP ($M = 8.6$). Construct validity was demonstrated with loading factors for each item on the questionnaire > 0.60 (Melnyk et al., 2008). Due to time constraints of this project, the post-test was administered after two weeks rather than the eight week period or the original study.

The questions on the EBPIIS cover a variety of topics in four main areas: (a) Actual practice change; (b) evaluating practice or EBP studies, (c) sharing evidence/studies with peers, and (d) accessing data directly. The implementation of EBP by nurses can take various forms and JCs have the potential of motivating nurses to implement EBP in multiple ways. The EBPIIS is an instrument that measures nurses' perception of whether or not they utilize evidence in practice in a variety of ways so is appropriate for this project.

Data Analysis

All data were analyzed using Microsoft Excel (Microsoft, 2013). The demographic data were analyzed with descriptive statistics. The sum of the Likert scale scores of the pretest and post-test EBPIIS scores for all 18 questions and all participants ($N = 21$) were compared. The difference between pre-test and post-test scores were then plotted on a histogram. A paired-samples t -test was then conducted to compare the scores on the EBPIIS by ICU nurses before JC participation and two weeks after JC participation. The pretest and

post-test scores of each item on the EBPIIS from all participants was then evaluated using a paired t-test.

The dependent or paired t-test should comply with four assumptions to have results that are considered valid. The first assumption is that the independent variables are measured on a continuous scale, which was met by the continuous scale (1-5) of the EBPIIS. The second assumption is that the independent variables are two matched pairs or related groups, which was met by the sample being the same for the pretest and the post-test. The third assumption is that there are no outliers in the differences in the groups, and the fourth assumption is that the differences follow an approximate normal curve. The third and fourth assumptions were met and confirmed by the histogram. A Q-Q plot also showed that the data is relatively close to the baseline, demonstrating no outliers and an approximate normal curve of the data. The same procedure was repeated for each individual question, resulting in a relatively normal curve without outliers for each question.

The null hypothesis was that there was no change in means between the pretest and post-test, reflecting no difference in the implementation of evidence after JC meetings. The analysis consisted of a two-tail test to determine if changes occurred in either direction with an alpha of < 0.05 .

Results

Thirty-two nurses volunteered to participate in this project. At one medical center, the first meeting was attended by seven participants and the second meeting had eight nurses attending. The other medical center had six nurses attend the first meeting and seven at the second with four nurses attending on the night shift. Due to logistical reasons, a meeting on night shift was not conducted at the other medical center. Of the original thirty-two participants, only N=21 answered the post-test and completed the project. Of the eleven who dropped out, seven (64%) were in the age range of 20-25, two (18%) were aged 36-40, and one each in in

the age groups of 26-30 and 46-49. Ten of the eleven who left the project had 1-5 years of nursing experience and one had 21+ years nursing experience, with two educated to MSN level, two to with an associate's degree, and seven to BSN level.

Twenty (95%) of the participants were female and only one (5%) was male. Most (n=9, 42%) of the participants were 26-30 years of age followed by the 31-35 year age group with n=6 (28%). Fourteen (66%) of the participants had only 1-5 years of experience followed by six (29%) who had 6-10 years of experience. Only one (5%) participant has a diploma or ADN level of nursing education. All others either had a BSN (n=15, 72%) or MSN (n=5, 23%; Table 1).

Table 1

Demographic Data (N=21)

<u>Age Range</u>	<u>n (%)</u>
20-25	4 (19)
26-30	9 (42)
31-35	6 (28)
36-40	0
41-45	2 (10)
45-50	0
50+	0
 <u>Years of Nursing Experience</u>	
1-5 years	14 (66)
6-10 years	6 (29)
11-14 years	0
15-20 years	1 (5)
21+ years	0

Level of Education

ADN/ Diploma	1 (5)
BSN	15 (72)
MSN	5 (23)
DNP/PhD	0

Note: ADN = Associate Degree in Nursing; BSN = Bachelor of Science in Nursing; MSN = Master of Science in Nursing; DNP = Doctor of Nursing Practice; PhD = Doctor of Philosophy

There was a significant increase in the mean of the EBPIIS pretest (M=29.33, SD=14.92) and EBPIIS post-test (M=32.71, SD=15.60) conditions; $t(20)=2.36, p=0.029$ ($p<0.05$). The mean EBPIIS score increase is seen in Table 2.

Table 2

Paired t-Test Comparison of Pre- and Post- Journal Club EBPIIS Means

<i>N</i>	<i>Pre JC Mean (SD)</i>	<i>Post JC Mean (SD)</i>	<i>t</i>	<i>df</i>	<i>p</i>
21	29.33 (14.92)	32.71 (15.60)	2.36	20	0.029*

* $p<0.05$; EBPIIS = Evidence Based Practice Implementation Scale

The mean of the differences of the post-test to pretest scores are summarized by participant characteristics in Table 3.

Table 3

EBPIIS scores, by participant characteristics

<u>Age</u>	<u><i>n</i></u>	<u>Range</u>	<u>Mean(SD)</u>
20-25	4	1-4	2.0 (1.22)
26-30	9	1-18	6.85 (5.25)
31-35	6	1-15	6.50 (4.68)
41-45	2	3-6	4.5 (1.5)
<u>Years experience</u>			
1-5	14	1-18	7.57 (1.51)
6-10	6	1-5	2.86 (4.12)
15-20	1		

<u>Level of education</u>			
ADN/Diploma	1		
BSN	15	1-18	4.6 (4.49)
MSN	5	2-12	6.4 (3.61)

Note: ADN = Associate Degree in Nursing; BSN = Bachelor of Science in Nursing; MSN = Master of Science in Nursing; DNP = Doctor of Nursing Practice; PhD = Doctor of Philosophy

By age, the range of 26 to 30 had the highest mean change, 6.85, followed by the age 31 to 35 range with a mean change of 6.5. The years of experience range of 1 to 5 years showed a mean change of 7.57. The 15 to 20 year range showed a mean change of 6.0. The mean change by level of education increased by education, the BSNs with mean change of 4.6 and MSNs with mean change of 6.4, whereas the one ADN nurse had a change of 15.

Of the respondents, there was one who scored the same on the pretest and the post-test, scoring 22 on both. Two participants scored lower on the post-test with two respondent scores dropping by two points and one by one point. The scores were 26 on the pretest and 25 on the post-test and the other score decrease was 31 on the pretest and 29 on the post-test.

Comparisons of the individual pretest and post-test answers were then conducted and may be seen in Table 4.

The majority of the individual questions did not reflect a significant change between pretest and post-test. However, there was a significant increase ($p=0.007$) in critical appraisal of evidence from research study. There was also an increase in informal discussion of evidence with colleagues ($p=0.0014$). The final individual question that showed a statistically significant change was the promotion of EBP to colleagues ($p=0.002$).

Table 4

Pre-to-post change in mean EBPIIS scores, by survey item

Question: In the past 2 weeks I:	Pretest		Posttest		Mean change	<i>t</i>	df	<i>p</i>
	Range	M (SD)	Range	M (SD)				
1. Used evidence to change my practice	1-5	2.290 (1.201)	1-5	2.480 (1.052)	-.19	1.64	20	0.257
2. Critically appraised evidence from a research study	1-4	1.520 (0.906)	1-5	2.480 (1.360)	.96	2.98	20	0.007*
3. Generated a PICO question about my practice	1-4	1.570 (0.904)	1-5	1.428 (0.955)	-0.142	1.13	20	0.267
4. Informally discussed evidence from a research study with a colleague	1-5	2.34 (1.020)	1-5	3.100 (1.380)	-0.76	3.69	20	0.001*
5. Collected data on a client problem	1-5	1.48 (0.910)	1-5	1.480 (1.006)	0	0	20	1
6. Shared evidence from a research study or studies in the form of a report with more than 2 colleagues	1-4	1.286 (0.700)	1-4	1.524 (0.793)	-0.238	1.75	20	0.67
7. Evaluated outcomes of a practice change	1-5	1.620 (0.998)	1-2	1.238 (0.426)	0.382	1.9	20	0.07
8. Shared an EBP guideline with a colleague	1-5	1.857 (0.888)	1-5	1.714 (0.982)	0.143	0.616	20	0.54
9. Shared evidence from a research study with a client	1-5	1.810 (0.906)	1-5	1.762 (1.109)	0.048	0.188	20	0.85
10. Shared evidence from research with a multi-disciplinary team member	1-5	1.571 (1.049)	1-5	1.667 (1.084)	-0.096	0.31	20	0.76
11. Read and critically appraised a clinical research study	1-5	1.952 (1.290)	1-5	2.048 (1.290)	-0.096	0.57	20	0.58
12. Accessed a Cochrane Database of Systematic Reviews	1-5	1.524 (1.180)	1-5	1.571 (1.178)	-0.047	1	20	0.33
13. Accessed the National Guidelines Clearinghouse	1-5	1.429 (1.050)	1-5	1.429 (1.180)	0	0	20	1
14. Used an EBP guideline or systematic review to change practice where I work	1-5	1.333 (0.943)	1-3	1.191 (1.191)	-1.095	0.9	20	0.38
15. Evaluated a care initiative by collecting client outcome data	1-5	1.381 (0.950)	1-5	1.429 (1.003)	-0.048	0.59	20	0.57
16. Shared the outcome data with colleagues	1-5	1.429 (1.003)	1-3	1.381 (0.722)	0.048	0.37	20	0.72
17. Changed practice based on client outcome data	1-5	1.429 (1.003)	1-3	1.333 (0.642)	0.096	0.62	20	0.54
18. Promoted the use of EBP to my colleagues	1-5	1.810 (1.005)	1-5	2.620 (1.045)	-0.81	3.6	20	0.002*

* $p < 0.01$; EBPIIS = Evidence Based Practice Implementation Scale

Discussion

The purpose of this project was to evaluate whether JCs have an impact on the self-reported implementation of EBP into bedside nursing practice. In this small sample the analysis shows that JCs do have a statistically significant increase in the mean pre- and post-test scores of the EBPIS. As these scores are self-reported by the nurses participating in the evaluation of this project, it is difficult to say that JCs have an actual impact on the implementation of evidence in practice. The score of nurses with fewer (1 to 5) years of experience was slightly lower than scores obtained by Melnyk, et al., (2008), although confounding factors to the results here could include smaller sample size, and institutional culture. Changes in education and social changes may also be a factor as the EBPIS validation study was published in 2008. Nurses with more years of experience (15 to 20) scored significantly lower than reported by Melnyk, et al., (2008), although when the tests were individually analyzed, this group did score higher in the pretest, without change to the post-test, indicating these nurses were already using EBP in practice, but the JC did not have any further influence. The mean scores by level of education increased with the level of education, which was expected, and Melnyk, et al., (2008) showed a similar increase in scores with higher level of education. Although the focus of the MSN was not reported by Melnyk, et al., (2008), the MSN-prepared participants in this evaluation were one Family Practice Nurse Practitioner and four Clinical Nurse Leaders.

When analyzed individually, three items on the EBPIS showed statistically significant improvement. The first item, critical appraisal of evidence from a research study may have been a result of reading the articles of the JC meeting itself. Studies have shown that JCs have an impact on EBP beliefs (Sciarra, 2011), confidence in reading research (LaChance, 2014; Honey & Baker, 2011; Nesbitt, 2013), and this project showed similar increase in reading research articles. Brown et al., 2008, found that one of the major barriers in implementing

EBP was lack of confidence in appraisal of research articles, which JCs can help to alleviate. The other two items showing statistically significant improvement were increase in informal discussion of evidence from a research study and the promotion of the use of EBP with a colleague was also observed by Nesbitt (2013). More specifically, there was not a measurable increase in using evidence to change individual practice, as was shown by Wilson (2015). The answers to questions that did not show a positive change may be related to need for more education on EBP to staff nurses and the role every nurse plays in finding this evidence. On two occasions during the pretest, before the JC meetings, the investigator was asked to define the term PICO (patient problem or population, intervention, comparison and outcome) question—a common method of formulating a clinical research question. In the questions relating to the Cochrane Database or National Guidelines Clearinghouse, only two participants indicated they had accessed these resources. Four of the individual answers reflected that the nurses appraised articles in the pretest, but showed they did more so in the post-test. Although the answers to questions about sharing evidence with clients were unchanged from pretest to post-test, the nurses are performing that form of teaching of evidence to patients or patient family members, as six of the respondents answered two to three in the pretest, but identical in the post-test. The questions relating to data collection and evaluation questions five, six, seven, fifteen, sixteen, and seventeen) were answered one to two in both the pretest and post-test. This indicates that many staff nurses are not involved in data collection on client problems, sharing evidence in the form of a report to two or more colleagues, evaluated outcomes of a practice change or care initiative, or shared these data with colleagues.

After the first meeting at both of the respective ICUs, the participating staff was asked what they would like to discuss at the next meeting. Choosing a subject for the next meeting was an identification of a possible practice problem or area of needed change, unfreezing, as

described by Lewin. Having the staff choose the subject of subsequent meetings was an attempt to involve the participants more directly in the change process, giving the added force of group involvement, which Lewin assigns such importance. This may not have been as useful in this case, as few participants attended subsequent meetings, although participants of the next JC meeting were informed that the subjects were chosen by their peers.

The participants in the JC meetings worked well together, bringing ideas how change could be implemented in their respective ICUs. They made recommendations as a group effort, of Lewin's moving stage, and came to a consensus how to proceed with the implementation of the evidence at the bedside. These recommendations were written and sent to all the staff as a mass email by the investigating DNP student. The unfreezing stage was not fully investigated due to time constraints of the project, although the articles chosen for discussion did have elements of comparing outdated practices to new evidence, therefore discrediting the old behavior as recommended by Lewin.

Strengths and Weaknesses

There are a number of strengths of this project. The EBPIS is a valid and reliable instrument and user-friendly. The project was carried out in the practice setting which facilitated the participation of working nurses. And allowing the nurses to select the topics for review in the JCs helped with their interest and engagement.

There were also a number of weaknesses. One weakness of this project is that the self-reported responses to the questions reflect individual perceptions of implementing EBP and do not indicate whether or not the subjects did actually implement the evidence into practice. This project did show that JCs have a positive impact on the self-report of nurses' perceptions of implementation of evidence into practice as reflected by the scores on the EBPIS, but whether the subject matter of the individual JC meetings was implemented was not evaluated by the project.

Attrition was another weakness in the results of this project. Of the original 32 participants, 35% did not return the post-tests. This weakened the results of this investigation by decreasing the sample size. The loss to follow up of the 11 participants who did not complete and return the post-tests may have altered the results of the analysis.

Another possible weakness is that the principal investigator is known to participants through employment at one health system and university projects at the other and this may have had a positive influence on responses to the EBPIIS questions. The participants may have answered higher on either the pretest or post-test to influence the opinion of the investigator.

In addition, it is important to note that this project was conducted at only two facilities in corresponding ICUs. The setting of the two medical ICUs and small sample size indicate that the results are not generalizable. The participants of project were recruited from participants in the JC and may have had a greater interest in EBP. Thus, their answers may not be representative of the entire nursing population.

Nursing Practice Implications

This project has added to the literature of evidence based practice and JCs. The results showed subjective improvement in the participating nurses self-report of the implementation of EBP, but further study, with objective measures, is needed to fully determine the effect of JCs on the implementation of evidence into practice.

The results did show areas for improvement. Further education is needed in the clinical setting to ensure that nurses do have a good understanding of EBP. Education is needed on how to access guidelines and databases, as well as what the implications are for individual practice. Reflected in Lewin's model of change, change occurs best with the group effort, the results show that few of the participating nurses were involved in data collection of

patient outcomes. More opportunity is needed for evaluation of outcomes and involvement in the most formal aspects of EBP implementation.

The sharing of results of research with clients also is an area for improvement. This is a part of patient education to aid in the understanding of care. Patient involvement in care has been shown to improve outcomes and satisfaction (James, 2013). Education is needed to ensure that patients are given accurate, evidence-based information regarding their treatment plan.

The results also show areas where nursing has more opportunity for involvement, such as data collection on patient care initiatives and patient problem areas. Greater involvement in this area can help to define particular needs in the specific environment involved. Another area of growth is the accessing of databases to find the best evidence. With the current time lag from research to bedside practice, the results of this project have provided evidence that JCs are useful in promoting discussion of EBP and have pointed out areas for nursing growth.

Implications for Further Research

In order to determine whether or not there is a causal relationship between JCs and EBP, further research is needed. The results do show that JCs did have a positive impact on self-reported EBP implementation by ICU nurses at the two settings specified. However, these results are not generalizable. Therefore, this project should be duplicated in other settings to generate more data on the subject. Another opportunity that warrants further research is the development of an instrument to measure the implementation of EBP. The EBPIIS measures only the self-report of the participants' perception of implementing EBP. To overcome this weakness, a study should be designed, with objective measures to determine the full impact of JCs on EBP implementation or patient outcomes.

The major problem encountered was low attendance, attrition, and loss to follow up, which was also seen in previous studies (LaChance, 2014; Wilson, et al., 2015; and O'Nan, 2011). Research is needed on how participation may be increased and what may be the preferred venue and format for JC meetings. Possibilities may include online discussion or chat rooms, in the work environment versus off site, and whether monthly or quarterly meetings would be better received. Research is also needed how to increase and maintain participation in the JC itself and factors that may be hindering participation, such as organizational culture, and support of the institution and leadership. The offering of incentives to staff for participation may be beneficial to participation, such as continuing education credits or extra pay, and should be investigated. Tying the JC meetings to a policy making body of the nursing unit or institution or to a practice committee may help ensure that the evidence discussed in the JC meetings is carried forward into practice may be helpful and should be investigated.

Products of the Doctor of Nursing Practice Project

The results of this scholarly project will be reported in open forum for defense of Doctor of Nursing Practice (DNP) degree, in accordance with the DNP Handbook (University of Virginia, 2015). In addition, a manuscript written in accordance with the author guidelines (Appendix L) of *MedSurg Nursing* will be submitted for publication.

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Appendix A
Literature Review Summary

<u>Citation</u>	<u>Design</u>	<u>Sample Size</u>	<u>Results</u>
LaChance, 2014	Review	20 articles	JCs keep nurses current with literature, improve skills in appraising literature, and helps nurses to learn latest EBP
Honey & Baker, 2011	Review	16 articles	JCs keep nurses current and impacts knowledge and behaviors, but limited studies of inpatient settings
Wilson, et al., 2015	Pilot study, quasi-experimental	36	Significant improvements in 8 weeks in EBP use. Limitations- attrition and attendance
Sciarra, 2011	Pilot study, pretest/posttest on EBP beliefs	7	Significant improvement on the EBP Beliefs scale pre and posttest. This led to EBP initiatives.
Fowler, et al., 2013	Descriptive study	29	Critical thinking, medical knowledge improved with applications to practice. Not mentioned if actually implemented into practice
O’Nan, 2011	Quasi-experimental study	14	Increased perception of barriers to implementing EBP, possibly related to nurses improved critical thinking
Bilodeau & Pepin, 2012	Qualitative study	50	Participants reported learning, but no mention of implementation of EBP
Nesbitt, 2013	Qualitative case study		More confidence in reading research, evolution of community of practice, reported change in practice to follow EBP guidelines

Appendix B

Script for Recruitment of Participants

Would you like to participate in a study on the effectiveness of journal clubs? We don't have much information on how journal clubs effect nursing practice. Your participation in this study can help us gain this knowledge. Your participation is voluntary. No personal information will be kept, and you don't have to participate if you don't want to. If you choose not to participate, it won't have any effect on your job or pay. If you choose to participate, you will be asked your age, years of nursing experience, and gender. You will then be asked a few questions on evidence based practice. Two weeks after the journal club meeting, you will be asked these questions again.

Appendix C

Informed Consent Agreement

Please read this consent agreement carefully before you decide to participate in the study.

Purpose of the research study: The purpose of this study is to determine the impact of Journal Clubs on bedside nursing practice. There has been limited research on the subject of journal clubs, and no rigorous study on their efficacy as a method to implement evidence into practice. There has been no study directly answering the question of whether the evidence learned in the Journal Club, JC, meeting was applied to bedside practice.

What you will do in the study: At the beginning of each meeting, a pre-test will be administered, followed by discussion of the articles. A posttest will be given to the participants, two weeks after the JC meeting. The post test will assess if the participant has implemented the evidence discussed into practice, has discussed with others the findings of the JC meeting, or disseminated the evidence in any way.

The pre-test and post-test will consist of the Evidence Based Practice Implementation Scale, an eighteen item questionnaire. You will be assigned an identification number for pairing the before and after questionnaires. At the beginning of each meeting, all questionnaires will have the date and you will be instructed to complete it prior to starting the journal club meeting. After the two week period, a mass email will be sent with a dated copy of the questionnaire you can print and complete. A box will be located on the ICU for the follow up questionnaires.

Demographic data will be collected, age, gender, years of nursing experience, and level of education.

You may skip any question you are uncomfortable with.

Time required: The study will require about 0.5 hours of your time in addition to the journal club meeting, 15 minutes for pretest and 15 minutes post test, two weeks after the journal club meeting.

Risks There are no anticipated risks in this study.

Benefits: There are no direct benefits to you for participating in this research study. The study may help us understand nursing journal clubs. This study will add to the literature of evidence based practice and journal clubs. Little vigorous research has been conducted on JCs, and further research is needed. This is the first study to examine the efficacy of journal clubs as a method to implement evidence into practice. A more in depth understanding of the precise role JCs can play in the clinical environment is needed, and this study will contribute to that understanding. The JCs established in the two respective settings will continue to examine the literature and evidence, bringing the latest developments to the bedside. They will also contribute to the continuing education of the participant nurses.

Confidentiality:

The information that you give in the study will be handled confidentially. Your information will be assigned a code number. The list connecting your name to this code will be kept in a locked file. When the study is completed and the data have been analyzed, this list will be destroyed. Your name will not be used in any report.

Voluntary participation: Your participation in the study is completely voluntary. Your employment will not be affected by their participation in the study.

Right to withdraw from the study: You have the right to withdraw from the study at any time without penalty.

How to withdraw from the study: If you want to withdraw from the study, tell the investigator. There is no penalty for withdrawing

Payment: You will receive no payment for participating in the study

If you have questions about the study, contact:

Patrick Hill
Claude Moore Nursing Education Bldg
225 Jeanette Lancaster Way- PO Box 800826
University of Virginia,
Charlottesville, VA 22903.
Telephone: (804) 216-4455
Email address: ph3fu@virginia.edu

Faculty Advisor: Dorothy Tullmann
Claude Moore Nursing Education Bldg
225 Jeanette Lancaster Way- PO Box 800826
University of Virginia,
Charlottesville, VA 22903.

Telephone: (434) 924-0131
Email address dft6f@virginia.edu

If you have questions about your rights in the study, contact:

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences
One Morton Dr Suite 500
University of Virginia, P.O. Box 800392
Charlottesville, VA 22908-0392
Telephone: (434) 924-5999
Email: irbsbshelp@virginia.edu
Website: www.virginia.edu/vpr/irb/sbs

Agreement:

I agree to participate in the research study described above.

Signature: _____ **Date:** _____

You will receive a copy of this form for your records

Appendix D**Letters of IRB Approval**

UNIVERSITY of VIRGINIA

OFFICE OF THE VICE PRESIDENT FOR RESEARCH
INSTITUTIONAL REVIEW BOARD FOR THE SOCIAL AND BEHAVIORAL SCIENCES

In reply, please refer to: Project # 2016-0008-00

February 4, 2016

Patrick Hill
Dorothy Tullmann
Academic Divisions
1729 Wilmington Ave.
Richmond, VA 23227

Dear Patrick Hill and Dorothy Tullmann:

The Institutional Review Board for the Behavioral Sciences has approved your research project entitled "The Efficacy of Nursing Journal Clubs as a Method of Implementing Evidence into Practice" through expedited procedures. You may proceed with this study. Please use the enclosed Consent Form as the master for copying forms for participants.

This project # 2016-0008-00 has been approved for the period January 27, 2016 to January 26, 2017. If the study continues beyond the approval period, you will need to submit a continuation request to the Review Board. If you make changes in the study, you will need to notify the Board of the changes.

Sincerely,

A handwritten signature in black ink, appearing to read "Tonya R. Moon".

Tonya R. Moon, Ph.D.
Chair, Institutional Review Board for the Social and Behavioral Sciences

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F 804-628-2420
lauren.goodloe@vcuhealth.org

March 18, 2016

Tonya R. Moon, PhD
Chair, Institutional Review Board for the Social and Behavioral Sciences
Office of Vice President for Research
One Morton Drive,
Suite 500
Charlottesville, VA 22903

Dear Dr. Moon,

I am writing this letter in reference to Patrick Hill and the need for his project to be reviewed by the Virginia Commonwealth University Health System IRB. I have reviewed the capstone project, *The Efficacy of Nursing Journal Clubs as a Method of Implementing Evidence into Practice*, and it is a quality improvement project and will not need to be reviewed by our IRB. I have approved his Capstone Project

Sincerely,

A handwritten signature in black ink that reads "Lauren R. Goodloe PhD, RN, NEA-BC".

Lauren R. Goodloe, PhD, RN, NEA-BC
Director, Medical & Geriatric Nursing,
Administrative Director – Nursing Research and
Assistant Dean for Clinical Operations
VCU Medical Center

Appendix E**Demographic Survey**

Demographic Data Form

Circle appropriate answer

Gender: Male Female

Age: 20-25 26-30 31-35 36-40 41-45 46-50 51+

Level of Education: ADN/Diploma BSN MSN DNP/PhD

Years of Nursing Experience: 1-5 6-10 11-15 15-20 21+

Appendix F

Evidence Based Practice Implementation Scale



Melnyk &
Fineout-Overholt

EBP
IMPLEMENTATION
SCALE

Below are 18 questions about evidence-based practice (EBP). Some health professionals do some of these things more often than other health professionals. There is no certain frequency in which you should be performing these tasks. Please answer each question by indicating the number that best describes how often each item has applied to you in the past 8 weeks.

In the past 8 weeks, I have:	No times	< 3 times	5 times	>5 <8 times	>8 times
1. Used evidence to change my practice...	1	2	3	4	5
2. Critically appraised evidence from a research study...	1	2	3	4	5
3. Generated a PICO question about my practice...	1	2	3	4	5
4. Informally discussed evidence from a research study with a colleague...	1	2	3	4	5
5. Collected data on a client problem...	1	2	3	4	5
6. Shared evidence from a study or studies in the form of a report or presentation to more than 2 colleagues...	1	2	3	4	5
7. Evaluated the outcomes of a practice change...	1	2	3	4	5
8. Shared an EBP guideline with a colleague...	1	2	3	4	5
9. Shared evidence from a research study with a client...	1	2	3	4	5
10. Shared evidence from a research with a multi-disciplinary team member...	1	2	3	4	5
11. Read and critically appraised a clinical research study...	1	2	3	4	5
12. Accessed the Cochrane database of systematic reviews...	1	2	3	4	5
13. Accessed the national Guidelines Clearinghouse...	1	2	3	4	5
14. Used an EBP guideline or systematic review to change practice where I work...	1	2	3	4	5
15. Evaluated a care initiative by collecting client outcome data...	1	2	3	4	5
16. Shared the outcome data collected with colleagues...	1	2	3	4	5
17. Changed practice based on client outcome data...	1	2	3	4	5
18. Promoted the use of EBP to my colleagues...	1	2	3	4	5

Copyright, 2003. Please DO NOT USE this instrument without permission from the authors. For further information about use, please contact us: arcc2006@gmail.com. Publishing of this scale, for any reason, is strictly prohibited.

Appendix G

Permission from Authors to Use Evidence Based Practice Implementation Scale

Hi Patrick. I am not back from break and am sending you the EBPI scale. I noted on your paperwork that you intended to start January 1. I apologize for the delay, but we close for the holidays.

Please let me know of any questions you may have - always happy to answer. As a reminder, this permission is solely for pen and paper use of the EPBI scale within your DNP project. If you find that the EBP scales are a good match for other projects, please contact me and I will get you the latest permission forms.

Please confirm receipt of the scale.

Wishing you all the best,

Ellen

Ellen Fineout-Overholt PhD, RN, FNAP, FAAN

Transforming Healthcare from the Inside Out

Join Me in Discovering the Wonder in Evidence-based Practice, Leadership and Innovation

<mailto:ellen.fineout.overholt@gmail.com> ellen.fineout.overholt@gmail.com

Appendix H

Author Guidelines for *MEDSURG Nursing*

Guidelines for Authors

MEDSURG Nursing, the official journal of the Academy of Medical-Surgical Nurses (AMSN), is a scholarly journal dedicated to advancing adult health nursing practice, clinical research, and professional development. The journal's goal is to enhance the knowledge and skills of adult health and advanced practice nurses to prevent and manage disease, and to work with patients and families to improve the health status of the nation's adults. Unless clearly specified, the views expressed in articles, editorials, and letters published in MEDSURG Nursing represent the opinions of the authors and do not reflect the official policies of AMSN. The journal accepts original articles: case studies, letters, descriptions of clinical care, and research. Query letters are welcome, but not required. Material must be original and never published before. Material is submitted for review with the understanding that it is not being submitted to any other journal simultaneously.

MEDSURG Nursing is a refereed journal. All manuscripts submitted undergo review by the editor and blind review by members of the manuscript review panel and/or editorial board members. Each manuscript is reviewed on its timeliness, importance, clarity, accuracy, and applicability to adult health/medical-surgical nursing.

Upon acceptance of the manuscript, the author will yield copy right to MEDSURG Nursing. Acquiring permission to reprint previously published materials is the responsibility of the author. Authors have the responsibility to verify that they have read all the materials cited in their manuscript and, if necessary, have contacted the relevant authors to verify the accuracy of cited material. Manuscripts are subject to copy editing. The author will receive proofs via email for review prior to publication.

Manuscript Preparation

Manuscripts must be typewritten, double-spaced, maximum length is 15 pages (3,750 words). References, photographs, tables, and all other details of style must conform to the Publication Manual of the American Psychological Association (APA, 6th ed., 2010).

Software: As a general rule, all files should be saved as MS Word. Manuscripts must not contain reference software codes, and the use of reference software is highly discouraged.

Title Page: Include the manuscript title, authors' names, credentials, and a brief biographic statement. Also include an address for correspondence, email address (required), day and evening phone numbers, fax number, and a brief abstract of 40 words or less.

Research Manuscripts: Include a brief explanation of introduction, purpose, method, findings, and conclusions.

Subheadings: Include subheadings in the manuscript where possible. Type all subheadings flush to the left margin.

References: Manuscripts that do not comply with reference and style requirements of the APA Manual (6th ed.) may be returned to the author for revision before peer review. References in the text should be cited by numbers cited for direct quotations. The reference list at the end of the manuscript should include only those references cited in the text, and be arranged alphabetically by author. Important: All references must be current, and from the last 3-5 years. If you are citing a study that is considered “classic,” please include a current citation to validate the information. All citations should reference primary sources. The use of secondary sources (material analyzed or interpreted from the primary source) is discouraged. If necessary, locate a copy of the original work and credit it as such.

Sample references are:

Periodical:

Evans, M.M. (2009). Solutions to the Nurse Faculty Shortage: A Response to the AACN. *MEDSURG Nursing*, 18(6), 387-388.

Book:

American Psychological Association (APA). (2010). *Publication manual of the American Psychological Association* (6th ed.). Washington, DC: Author.

Chapter in a Book:

Gray, M. (2008). Management of men with reproductive disorders. In J. Black, & J. Hawks (Eds.), *Medical-surgical nursing: Clinical management for positive outcomes* (8th ed.) (pp. 873-911). Philadelphia: Elsevier.

Web site:

It is no longer necessary to include the date a citation was accessed, unless the material will change over time.

Figures: These include line drawings, photographs, diagrams, and graphs. Each should be numbered, and the number must correspond to a statement in the manuscript directing the reader (see Figure 1). Include a legend sheet with captions. When using figures adapted or obtained from another source, the author must obtain written permission for both print and electronic use from the original publisher.

Photographs: Camera-ready photographs may be black and white or color. Photos should be glossy, 5”x7”.

Electronic files (JPGs) must be in high resolution, 300 dpi; they may be inserted directly into the manuscript. Please note images found on Google, Bing, or other Internet search engines are not public domain; permission from the original source (not Google) must be provided.

Publication

Authors will be notified of a manuscript’s acceptance within 12 weeks of receipt, with publication scheduled to the next available issue. Authors may purchase reprints of their article at the time of publication. If contact information (address, email address), or biographical information changes during time of acceptance to publication, please contact the journal office to update your information.

Recommended Resource

Nicoll, L.H. (2012). *Manuscript success: A systematic approach to publishing in the professional literature*. Portland, ME: Bristlecone Pine Press.

Please submit manuscripts to:

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msjrnl@ajj.com

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