

Journal Clubs: A Two-Site Case Study of Nurses' Continuing Professional Development

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Abstract

Aim: This paper is a report on a study that explored the professional development of intensive care unit nurses in journal clubs.

Background: Evidence-based practice is important in nursing care (Krom, Batten, & Bautista, 2010). However few nurses feel comfortable using evidence to guide their practice (Pravikoff, Tanner, & Pierce, 2005). Journal clubs are a way to establish science as conversation (Wright, 2004) and foster knowledge translation for evidence-based nursing practice (Goodfellow, 2004).

Methods: Monthly journal club meetings were held with the participation of a total of 71 healthcare professionals (65 nurses, 2 physicians, 2 pharmacists, 1 physiotherapist, and 1 respiratory therapist), who worked in two intensive care units of an Ontario hospital. After six months of meetings, 21 individual interviews were conducted with nurses, physicians, pharmacists, and nurse educators. Additional data collection included two focus groups, surveys, a review of staff meeting minutes, and researcher field notes.

Findings: Journal clubs provided nurses with incentive to read research articles, improved nurses' confidence in reading research, created a community of peers who worked collaboratively to improve clinical practice, provided a structure for nurses to reflect-on-practice, and led to reported changes in clinical practice. However, the data suggests that any gains in competence of nurses with the critical appraisal of research articles were probably modest.

Barriers to participating in journal clubs and evidence-based practice are also identified.

Conclusion: Journal clubs can foster knowledge translation and evidence-based practice through creating a community of practice and by providing nurses with motivation, structure, and confidence to read research articles. However, nurses reported a lack of critical appraisal skills

and uncertainty about how to implement evidence into practice. Journal clubs may have a greater impact when implemented alongside other knowledge translation strategies such as working with clinical nurse specialists in order to enhance evidence-based practice.

SUMMARY STATEMENT

What is already known about this topic:

- Today, healthcare education needs to achieve two objectives: (1) provide the appropriate content knowledge, and (2) prepare learners with self-directed learning skills that will serve them throughout their lifetime.
- Most continuing professional nursing education continues to be largely didactic and content focused.
- Journal clubs establish science as conversation, encourage nurses to re-examine their practice, and identify gaps in knowledge. These outcomes can help to enhance self-directed learning, knowledge translation, and evidence-based practice.

What this paper adds:

- Nurses' lack of comfort with reading research articles and using research to guide practice was a pre-existing barrier to knowledge translation and evidence-based practice in the two study sites.
- Journal clubs affected the self-directed learning of many ICU nurses by providing needed structure and incentive to read journal articles, and improving the confidence of nurses in reading research articles.
- Journal clubs created a community of peers who worked collaboratively to improve practice.

Implications for practice and policy:

- Journal clubs are one strategy with the capacity to advance evidence-based practice through knowledge translation and engage and empower nurses at a grass-roots level.
- In developing journal clubs, topics should be chosen for their relevance to their targeted population.
- Special efforts should be made to include nurses who may want to participate but who may feel intimidated to do so.

Keywords: Self-directed learning, evidence-based practice, nursing journal clubs, knowledge translation

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Introduction

Evidence-based practice (EBP) is an important part of nursing care (Brown, Wickline, Ecoff, & Glazer, 2009; Coopey, Nix, & Clancy, 2006; Koehn & Lehman, 2008; Krom, Batten, & Bautista, 2010). However few nurses feel comfortable finding research articles, appraising evidence, or using research to guide their practice (Davies, 2002; Krugman, 2003; Pravikoff et al., 2005; Thompson et al., 2001). Most importantly, there is a lack of investment in EBP among many practicing nurses (Krom et al., 2010; Thompson et al., 2001). Journal clubs are one way to establish “science as conversation” (Wright, 2004), foster a positive attitude towards research (Goodfellow, 2004), and help nurses gain skills required to enhance knowledge translation for EBP (Goodfellow, 2004; Kartes & Kamel, 2003; Kirchoff & Beck, 1995; Sheehan, 1994; St. Pierre, 2005).

The purpose of this study is to explore the continuing professional development (CPD) of nurses participating in nursing journal clubs within two intensive care units (ICU). Two journal clubs were created and run in two different campuses within the same hospital. Over a six month period, 71 healthcare professionals, including 65 nurses, attended 12 monthly journal club meetings across the two study sites. In order to explore nurse’s experiences in journal clubs, a qualitative two-site case study was undertaken with six data collection methods.

Background

Self-Directed Learning

The definition of self-directed learning (SDL) used in this study is the capacity of learners to plan, implement, and evaluate their own learning activities (Merriam, Caffarella, & Baumgartner, 2007). Today, in order to prepare learners to live in a world that is marked by rapid

and sweeping change, education needs to achieve two objectives: (1) to provide the appropriate content knowledge, and (2) to prepare learners with SDL skills that will serve them throughout their lifetime (Dynan, Cate, & Rhee 2008).

Building on the work of Houle (1961; 1980), Knowles (1975; 1980), and Tough (1971; 1980), early SDL research was descriptive (Merriam, 2001). This body of research explored the prevalence and process of SDL among adults (Merriam, 2001). Other areas of research include SDL models (Garrison, 1997; Grow, 1991), means of assessing SDL (Bonham, 1991; Field, 1989; 1991; Fisher, King & Tague, 2001; Fisher & King, 2010; Guglielmino, 1997; Guglielmino & Roberts, 1992; Hoban, Lawson, Mazmanian, Best, & Seibei, 2005; Oddi, 1986; 1990), the goals of SDL (Brookfield, 1984; 1985, 1993, 2005; Collins, 1995; Merriam, 2001; Mezirow, 1985) as well as the personal characteristics of self-directed learners (Merriam et al., 2007). Recent research explores the importance of SDL for lifelong learning and its role in continuing professional education, human resource development, workplaces, and organizations (Merriam et al. 2007). In addition, SDL is increasingly studied within the context of new technology (Merriam et al. 2007) and in distance and online learning environments. This study will explore SDL in the context of continuing professional education.

Continuing Professional Nursing Education

Most professional nursing organizations demand lifelong SDL as a requirement in order for members to maintain licensure (Griscti & Jacono, 2006). However, in practice, it is health care organizations that are positioned to fund continuing education. These organizations are interested in short-term educational goals such as orientation and in-service programs, and teaching new skills (Griscti & Jacono, 2006; Lawton & Wimpenny, 2003). Therefore, most

continuing professional education continues to be largely didactic and content focused (Friedman & Phillips, 2004), and therefore fails to target the research awareness or reflective practice (Barriball, While, & Norman, 1992) that are essential components of self-directed learning and evidence-based nursing practice.

Knowledge Translation and Evidence-Based Practice

Evidence-based practice (EBP) is the process of using the best available evidence in making decisions in caring for patients (Goode & Piedalue, 1999). Therefore, EBP describes a form of clinical nursing practice. Knowledge translation (KT) is essential for EBP to occur. KT is the study of how to, “get research from the bench to the bedside” (Estabrooks, 2003, p. 53). Although there are many forms of knowledge, in healthcare, KT most often refers to research knowledge (Graham, et al. 2006). Therefore, KT for the health professions is the study of understanding and enhancing research *utilization*. KT literature is spread across many fields including education, management, and nursing (Thompson, Estabrooks, & Degner, 2006). Although KT is a rapidly expanding field of study, the term is not consistently conceptualized or defined (Thompson et al. 2006). Knowledge transfer, knowledge exchange, research utilization, implementation, dissemination and diffusion are other terms used in the KT field of study, however, these terms are neither consistently applied nor necessarily interchangeable (Graham, et al. 2006).

Currently, the time it takes for research results to be implemented into clinical practice is too long (Graham et al. 2006). This gap between research results and current clinical practices is known as the “knowledge-practice gap” or the “knowledge-to-action gap” (Graham et al. 2006). KT in the health professions was born out of the need to reduce this gap (Bellman, Webster, & Jeanes, 2010). KT as a field of research is still in its infancy (Mitton, Adair, McKenzie, Patten, &

Perry, 2007). The bulk of KT research has examined barriers and facilitators to KT, frameworks to organize and design KT strategies, perspectives of stakeholder groups, and measures to assess the impact of research on health policy (Mitton et al. 2007). The current international KT research agenda focuses on understanding whether KT structures, theories, frameworks, and programmes are working and if not, why not (Bellman et al., 2006). At present, however, there is very little evidence to show what KT strategies work and in which context (Mitton et al. 2007). In the nursing profession, communities of nurses are beginning to be understood as essential for both the production and transfer of knowledge (Estabrooks, 2003). Knowledge flows readily within communities of nurses, and therefore, understanding and learning how to access these communities is an essential in enhancing research use among nurses (Estabrooks, 2003).

Learning Communities

Learning communities are a new and different kind of social learning medium (Lieberman & Mace, 2009) that have the potential to address the gaps in continuing professional nursing education and to enhance KT for evidence-based nursing practice. Lieberman (2009) defines a learning community as a community of professionals that challenges traditional practice norms and she identifies three essential characteristics of such communities: (1) a shared mission amongst members; (2) a collaborative culture; and (3) the engagement in continual improvement of practice. Although the definition of a learning community varies from one author to the next, the definition provided by Lieberman encompasses its most essential components. This definition can also accommodate various forms of learning communities, such as journal clubs for nurses, so long as these groups possess the above three components.

The strength of learning communities lies in their ability to create authentically collegial collaboration (Skerrett, 2010). These kinds of interactions influence professional identity (Lieberman, 2009), which in turn, can be the impetus for changing practice. Through authentically collegial collaboration, professionals are recognized for their expertise and are open “to others’ ideas, to research, literature, and thinking about their peers as sources of knowledge and development” (Lieberman & Mace, 2009, p. 462).

Research studies examining whether learning communities have the capacity to change practice are limited in number but show promise (Vescio, Ross, & Adams, 2008). The available evidence suggests that learning communities can create a culture of openness, collaboration, as well as encourage embracing uncertainty, and critical questioning (Lieberman, 2009). In doing so, learning communities can create a culture with norms of innovation and inquiry (Lieberman, 2009). Furthermore, learning communities have the potential to lead professionals to “continuously inquire into their practice, and, as a result, discover, create, and negotiate new meanings to improve practice” (Skerrett, 2010, p. 648).

Journal Clubs

A journal club is a meeting amongst colleagues designed to discuss articles that appear in professional journals that are relevant to their practice (Rich, 2006). Findings from nursing journal club research suggest that they can improve nurses’ confidence in interpreting and appraising research articles and foster a positive attitude towards research (Goodfellow, 2004); establish a regular habit of reading and raise awareness of relevant literature (Sheehan, 1994); increase knowledge (Kartes & Kamel, 2003); and lead to practice changes (St. Pierre, 2005; Kartes & Kamel, 2003; Kirchhoff & Beck, 1995). Furthermore, surveys of satisfaction of

participants in journal clubs found positive evaluations from nurses (Campbell-Fleming, Catania, & Courtney, 2009; Sheehan, 1994; St. Pierre, 2005; Valente, 2003). The only reported negative finding about journal clubs in the literature is low participation levels (Campbell-Fleming et al. 2009).

However, the available evidence to support the benefits of journal clubs is sparse. In fact, the majority of nursing journal club literature merely describes one author's experience with a nursing journal club (Campbell-Fleming et al. 2009; Goodfellow, 2004; Kartes & Kamel, 2003; Kirchhoff & Beck, 1995; Luby, Riley, & Towne, 2006; Rich, 2006; Sheehan, 1994; St. Pierre, 2005; Tibbles & Sanford, 1994; Valente, 2003). In terms of a critical appraisal of the literature, it would appear that research articles illustrate the setting of the journal club and the format used within their respective settings, but do not contain adequate methodological detail for readers to appraise the quality of research or the validity of the conclusions. The majority of nursing journal club literature is limited to research designs with data collection methods such as participation rates (Campbell-Fleming et al. 2009; Valente, 2003) or informal evaluation by participants (Campbell-Fleming et al. 2009; Goodfellow, 2004; St. Pierre, 2005; Valente, 2003). There is a need for more research on nursing journal clubs with rigorous and transparent methodologies in order to understand the potential and role (if any) of journal clubs in nursing CPD and/or enhancing knowledge translation for evidence-based practice.

Conceptual Framework

A social constructivist perspective of learning guided the journal club design and research process in this study. Within this research paradigm, the conceptual framework for the study as described in Figure 1, has been adapted from Ginsberg and Wlodkowski's (2009) motivational

framework for culturally responsive teaching. The outer circle of the conceptual framework represents social constructivism. Constructivist assumptions within this study are that knowledge is actively constructed by learners, knowledge is co-constructed in a social medium, prior knowledge and experience play an important role in learning, and language is an essential tool for learning (Davydov & Kerr, 1995; Palincsar, 1998; Proulx, 2006).

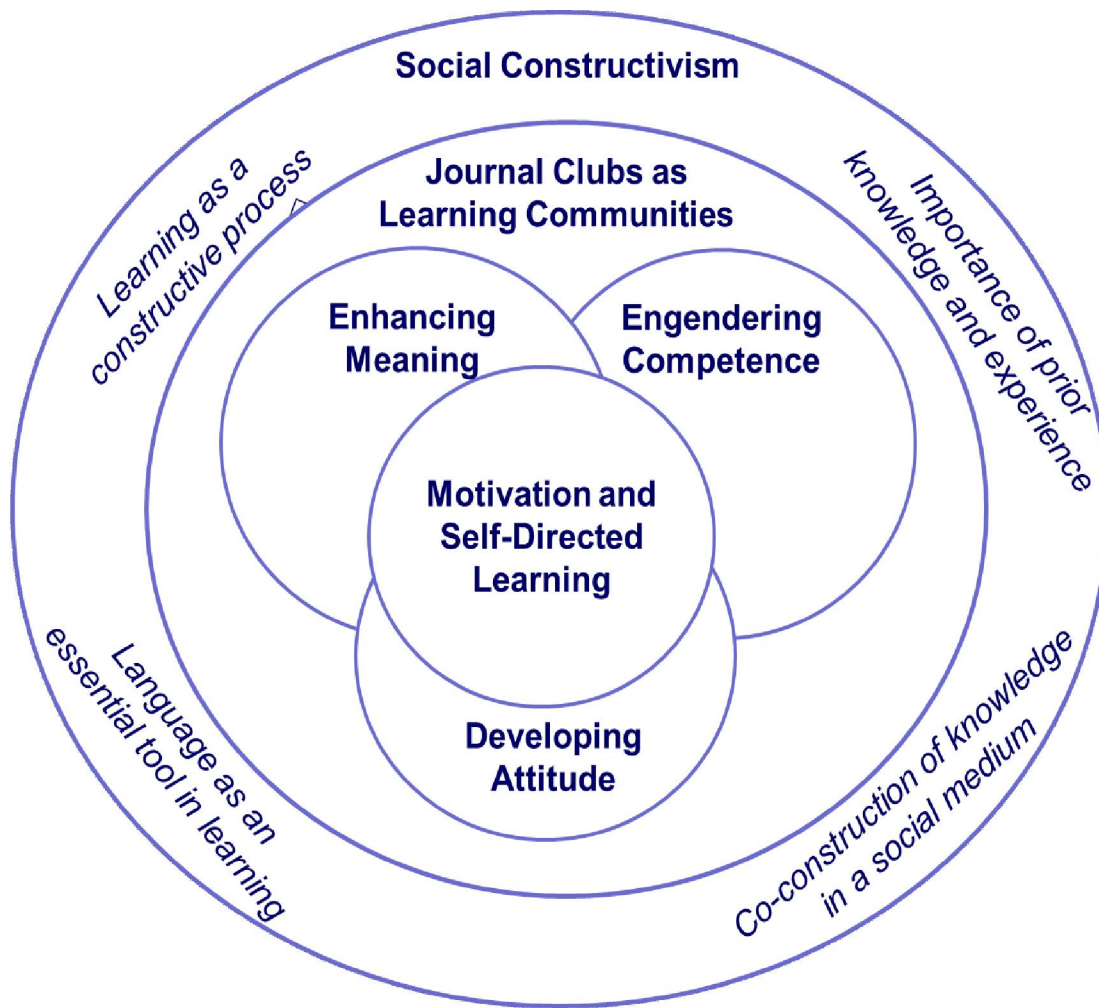


Figure 1. Conceptual Framework.

Within a social constructivist paradigm, this study attempted to create journal clubs as learning communities. Journal clubs represent the second largest circle in the conceptual

framework. The three overlapping circles in the diagram of the conceptual framework represent the influence of Ginsberg and Wlodkowski's (2009) *Motivational framework for culturally responsive teaching* in the design of the journal clubs. This motivational framework was appropriate because motivation is a pre-requisite for self-directed learning (Deci & Ryan, 2000). Three motivational elements from Ginsberg and Wlodkowski's framework were considered in the design of the journal clubs: enhancing meaning, engendering competence, and developing attitude. Within this study, enhancing meaning represents helping nurses to understand how research applies to their practice. Developing attitude is fostering a positive attitude towards journal articles and research, and engendering competence represents helping nurses to feel more competent with evidence-based practice. Self-directed learning is placed in the center of the conceptual framework – where all other elements intersect – because self-directed learning was the aim of the journal clubs and the primary research question in this study.

The Study

Aim

The purpose of this study was to explore the CPD of nurses in two ICU nursing journal clubs. These two journal clubs were designed and run for the purpose of this study. Three research questions guided this study,

- 1) How do journal clubs affect the self-directed learning of intensive care unit nurses?
- 2) What kind of community is created within journal clubs?
- 3) How do journal clubs affect nurses' clinical practice?

Design and Data Collection

A qualitative two-site case study (Stake, 2006) with six data collection methods was conducted. Data collection methods included: (1) individual interviews with a purposeful sample of participating nurses, (2) individual interviews with nurse educators, physicians, and pharmacists who work in the two study sites, (3) focus groups with participating nurses, (4) document review of unit council and staff meeting minutes, (5) researcher field notes, and (6) surveys of journal club participants.

Data were collected between November 2010 and May 2011. Six semi-structured individual interviews with nurses, and two focus groups with a total of eleven nurses (8 in Site One and 3 in Site Two), were conducted across two study sites to explore the nursing experience of participating in journal clubs. Field notes were collected to record the demographics and the researcher's observations of each journal club. A review of ICU-staff meeting minutes documents and interviews with six physicians, six pharmacists, and three nurse educators were included in the data collection to explore the impact (if any) from the journal clubs on nursing clinical practice, and to validate findings from the other sources of data through triangulation. All interviews were audio-recorded and transcribed verbatim. Lastly, anonymous surveys were available for nurse participants at the end of each journal club meeting running the last three months of journal club. The surveys were added because the researcher was leading the majority of journal clubs and leading was affecting his ability to make reliable observations.

Context

As part of this study, the principal investigator designed and facilitated journal clubs every month for a period of six months across two study sites. A total of twelve journal club

meetings were held across the two sites during this period. The following is a description of the journal clubs that were created for, and the subject of, this study.

Journal club meetings were held from 7:30 pm-9 pm in conference rooms at each hospital. Dinner was provided. In order to select the most appropriate journal articles, the researcher-nurse consulted the participating nurses at each campus and chose topics based on their interests. The topics covered in journal clubs are listed in Table 1. Up to two articles were reviewed per evening. The chosen journal article(s) were made available for all nurses prior to the journal club meetings. Articles were reviewed at the beginning of the meeting using PowerPoint (20 minutes) and a guided discussion followed. In addition, some meetings started with information sessions intended to help nurses in selecting and appraising journal articles. These information sessions were brief and geared to an introductory level. The researcher offered to initially be the facilitator and discussion leader. As the journal club progressed, nurses were encouraged to take more responsibility in choosing articles and leading discussions. Two staff nurses led a meeting in Site One, and no nurses other than the principal investigator led any meetings in Site Two. In addition, one ICU pharmacist led a journal club meeting at each site. The remainder of the meetings (8) were facilitated by the principal investigator.

Insert Table 1 About Here

Participants

The implementation and evaluation of the journal clubs occurred in two ICUs at two different campuses of an Ontario Hospital. The journal clubs were intended to be open to all nurses and healthcare professionals employed in the ICUs regardless of education, experience level, or position within the unit. Participants were free to attend any journal club without having

attended previous meetings and without commitment to future meetings. Therefore, journal club participants were a floating pool of healthcare professionals rather than one consistent group of professionals who met regularly. Although other healthcare professionals were welcome to attend, journal clubs were designed and run for nursing professional development. In addition, all data was collected to explore only the nurses' experience of attending journal clubs. Data from other healthcare professionals were used to verify the impact of the journal clubs on nursing clinical practice. Journal club participants were recruited via posters and emails. Six nurses who had attended a minimum of two journal club meetings were interviewed individually (Table 2); and, eleven nurses who had attended at least one meeting participated in two focus groups across both study sites (Table 2). All nurses were recruited via email.

Insert Table 2 About Here

All ICU nurse educators and pharmacists from both study sites were invited to participate in interviews. The inclusion criterion for nurse educators and pharmacists was employment in one of the study sites; there were no exclusion criteria. All nurse educators and pharmacists were recruited through email, and all who responded were interviewed. The inclusion criteria for physicians were (1) being a staff physician, and (2) employment in one of the study sites. The exclusion criterion for physicians was working in both study sites. This exclusion criterion was selected in order to keep the findings of the two study sites separate. All physicians who met the inclusion criteria were invited to participate in individual interviews through email, and all of the physicians who responded to these emails were interviewed.

Positioning the Researcher within the Study

The principal investigator in this study is employed as a staff nurse in one of the study sites (Site One). The principal investigator acted as both facilitator and researcher of the journal clubs in both research sites. The benefits and limitations of the researcher's relationship to this study are explored in limitations. This research was designed and undertaken with the assumption that evidence-based practice is essential in furthering the profession of nursing and in improving patient outcomes. Before undertaking this study, the nurse-researcher observed his colleagues consulting their peers, consulting with professionals from other disciplines, as well as learning from experiences on the job. However, the nurse-researcher has witnessed very few bedside nurses accessing research to answer clinical questions or to enhance their professional practice.

Ethical Considerations

Ethics applications and procedures were completed and followed and ethics approval was attained at both the associated university and hospital.

Data Analysis

Data were grouped by the two different study sites to facilitate data analysis within each case before analyzing data across cases, in keeping with Stake's (2006) multi-case study data analysis strategy. All data were first analyzed by hand and then transferred into NVivo Version 9 for further analysis. Data were analyzed within each case using Creswell's (2007) procedures. After completing within case data analysis, cross-case analysis was conducted using Stake's procedures.

Rigour

Nurses who participated in individual interviews were asked to comment on the themes identified after analysis of their respective interviews (Cresswell, 2007). Triangulation was used between the two sites and six data collection sources (Cresswell). In addition, a coding comparison query was performed with Nvivo9 to establish the reliability of qualitative data analysis. Coding comparison query is a data analysis program within Nvivo 9 that allows two or more researchers to code data independently and to compare coding agreement between these researchers. For this study, a coding comparison was conducted by having a graduate student colleague from the Faculty of Education analyze a sample of transcripts using a list of the definitions for each theme (Table 3), and then code the transcripts independently. The result of this coding comparison query was a 95% agreement in coding between the principal investigator and the graduate student colleague.

Insert Table 3 About Here

Findings

Six major themes were identified across both study sites: (1) incentive, (2) confidence, (3) community, (4) changing practice, (5) reflection, and (6) barriers. These themes are defined in Table 3. The following is a description of each theme with supporting quotes.

Incentive

Data from individual interviews and focus groups describe nurses feeling motivated to read professional literature as a result of the journal clubs. The following two nurses describe

feeling accountable to journal clubs, and describe how journal clubs provided a needed incentive to read the journal articles.

It is kind of like when you go to the gym and if you are going by yourself you can go or leave any time, so you might not get a good workout. Whereas if you are going with a friend or have to meet a personal trainer at a certain time you might get more out of it because you are accountable to something (Nurse 1, Site Two).

A nurse from Site One describes a similar feeling.

[Journal clubs] force you in a way, you're committed to go... you don't have to go but you are committed and you know the dinner is tonight and you have to read the articles. It is a motivator knowing you are going to have dinner with your colleagues. It has motivated my desire to learn (Nurse 3, Site One).

Many nurses in Site One also describe reading more not only within, but also outside of journal clubs as a result of their experiences within the journal clubs. When asked what she had gained from journal clubs, one nurse shared, "I think I am reading more. I think the things that came up in journal clubs made me look at more articles. I looked at more bariatric articles because I didn't like the one [chosen]" (Nurse 2, Site One). No examples of nurses reading more outside of the journal clubs were reported in Site Two.

Confidence

The comfort level of nurses with respect to EBP varied greatly. However, data from individual interviews, focus groups, nurse educator interviews, and in the researcher field notes demonstrate that some nurses gained greater comfort in reading research articles. The following

quote from a focus group explains how journal clubs helped one nurse feel more comfortable with research articles.

You realize anybody could read a journal article. It doesn't have to be a graduate student... Anybody can read it and see what is valid and what is not or what is interesting and what is not (Nurse 5, Site Two).

Another nurse shares her perception that journal clubs have made her colleagues more critical of research articles.

...People are looking at journal articles not so much just as the word of God, but they are able to now – because of instruction during the journal clubs – look at a journal and say this is not a good journal, and kind of deciding for themselves that they should be looking a little bit at how articles are written, who is writing them, whether they are actually pertinent or not (Nurse 2, Site One).

Journal clubs were not designed with the intention of significantly improving the competence of nurses in critiquing research, nor were any measures to assess the competency of nurses in research appraisal included. Data from this case study suggests any gains in research appraisal skills reported by participants as a result of participating in journal clubs are modest. Consider the following description from one nurse.

I feel slightly more comfortable [reading journal articles] after doing the journal clubs just because we have been discussing stronger evidence versus weaker evidence and why this journal is better than this one, how it applies to our unit based on sample size and sample type, but I still feel like it is a weakness of mine ... (Nurse 1, Site Two).

Community

Journal clubs were characterized by nurses working collaboratively as a group of peers. The collaborative nature of the journal clubs was most evident in the overwhelming number of comments that stressed the importance of discussion amongst peers. These comments arose in individual interviews and focus groups as well as in the surveys across both study sites. The following are some examples of survey responses when nurses were prompted with the question, “what’s working for you”? One nurse responded, “Sharing information and ideas of practice” (Site Two), and another, “Conversation amongst colleagues” (Site One). The following nurse elaborates on the impact of a collaborative dynamic in journal clubs.

Whether you have an opinion or you don’t have an opinion it is no big deal because in the end just for your participation I think you will create a bond with the people that are involved in furthering their own knowledge and furthering knowledge within the unit (Nurse 1, Site One).

The discussions within journal clubs were constructive and often focused on improving practice. The following comment from a survey illustrates the importance of discussion as a means of negotiating changes in practice, “As a new nurse, I really appreciate hearing about the experiences of other nurses in order to incorporate different things into my own practice” (Survey, Site Two). Another nurse from Site One describes collaborating to improve practice when he articulates what he has enjoyed about the journal clubs, “For me it is more learning about experiences and how others deal with it and starting that conversation” (Nurse 5, Site One). The researcher’s field notes also documented the constructive nature of discussions in journal clubs. For example, in Site Two, during a journal club regarding ‘sedation’, nurses

questioned the current practice of sedating all ICU patients. Not all nurses shared the same opinions, but there was a serious discussion about how to improve sedation practices for ICU patients. In Site One, a journal club about ICU delirium stimulated a conversation about how to better prevent, recognize, and treat ICU delirium.

Although the perceived purpose of journal clubs varied, journal clubs were valued by most participants. For some, journal clubs were viewed only as a place for conversation with colleagues and a place to exchange ideas (Nurses 4-6, Site Two). For others, journal clubs were a venue that could not only change individual practice but could also affect larger policies within the ICU (Nurse 1, Site Two). Despite the different opinions on the perceived purpose of journal clubs, many nurses at both sites strongly expressed how they valued journal clubs as important CPD. This finding arose from individual interviews, focus groups, and the surveys across both study sites. One nurse stated, “For me these journal clubs are an important part of my continuing to grow as a professional and as an individual” (Nurse 4, Site Two). Another nurse expressed a sense of pride in attending journal club: “It is always a source of pride to say I’m going to journal club for RNs” (Surveys, Site One).

Changing Practice

One of the themes that emerged from individual interviews and focus groups, interviews with educators and pharmacists, and the researcher field notes in both sites was how journal clubs influenced nursing practice outside of the journal clubs in both subtle and more obvious ways. A participating nurse educator describes the nature of subtle practice changes.

I am not sure if there is a real concrete example of that [changes in practice] happening yet, it is probably more subtle. ... I think there is more questioning and discussion around

not necessarily topics from the journal clubs but around anything that comes up in practice (Educator 1, Site One).

This educator suggested that some nurses are both questioning more and discussing more practice issues at the bedside as a result of journal clubs. When asked if he had observed any impact from nursing journal clubs in the ICU, a participating pharmacist shared the following observation.

I had a lot more nurses coming up to me and asking me questions about daily interruption [of sedatives] and identifying over-sedated patients, which is basically the purpose of that journal club (Pharmacist 3, Site One).

Journal club participants also describe specific practice changes that they either have made, or will make, as a result of journal clubs. For example, in a survey following a journal club about fluid resuscitation one nurse described the following, “[I will] promote use of 5% albumin with sepsis pt.’s more than not – if an MD is unsure” (Survey, Site One). Another nurse describes a change in her practice as a result of a journal club she attended.

We had the journal club about families for paediatric traumas and I had a trauma patient who was seventeen and... [the journal club] just made me think about our own policies and when we kick families out and how evidence doesn’t really support that as far as family perspectives, even staff perspectives. It just made me consider thinking about [this] when I am kicking family members out. That had an impact (Nurse 1, Site Two).

Other data suggests that journal clubs had no impact on nursing practice. All six physicians and four of the six pharmacists interviewed were unable to identify any changes in nursing practice at all. It should be noted that these six physicians and four pharmacists did not

attend any of the journal club meetings. As another pharmacist suggested, it might be difficult for someone who has not attended any of the journal club meetings to be able to observe an impact resulting from these meetings. Without having read the articles and participated in the journal club discussion, other healthcare professionals would not know what changes in practice to look for.

I think that I wouldn't have recognized the changes in the examples that I gave if I hadn't been part of the journal club... I think if somebody had come up to me and said, "We are using this drug in this patient, is this how they studied it?" I wouldn't have recognized that as a change in practice if I didn't know that the week before, [the nurses] had a journal club on that topic (Pharmacist 1, Site Two).

Document analysis of ICU-staff meeting minutes from both study sites provided no examples of the journal clubs influencing practice. The failure of any practice changes to arise in staff meetings suggests that journal clubs' influence on clinical practice was limited to individual nurses rather than the unit as a whole. In addition, when asked if journal clubs have led to any practice changes, some of participants responded that journal clubs have not changed their practice (Nurses 4-6, Site Two; Nurse 2, Site One). Therefore it appears that journal clubs resulted in practice changes for some nurses, but not others. Finally, it should be noted that a greater number of changes in practice were identified in Site One than in Site Two.

Reflection

Another theme that emerged from the data was how journal clubs led nurses to reflect on their clinical practice. This theme was identified in both sites and arose from individual

interviews, focus groups, and surveys. One nurse describes how journal clubs provided a structure that facilitated reflecting on practice.

I have shared my feelings about certain topics, like politically incorrect stuff... Without a conversation like that, you would never talk about how looking after a bariatric patient makes you feel. I wouldn't start that without some sort of structure (Nurse 3, Site One).

Journal club topics influenced the degree of reflection that occurred. The topics that provoked the most discussion—such as end-of-life nursing care, multidisciplinary communication, organ donation, and bariatric patients—are the topics about which nurses provided the most examples of reflecting on practice. These are all notably sensitive topics for nurses. Data from individual interviews and focus groups across sites also provided examples of nurses revisiting discussions about such sensitive topics outside of journal clubs. These conversations occurred in the staff break room and at the bedside. This data suggests that the reflection that took place within journal clubs was not limited to this environment and continued to occur in practice.

Barriers

Two kinds of barriers emerged from the data: barriers to EBP and barriers to journal club.

Barriers to Evidence-Based Practice. One barrier to EBP identified in both sites is a lack of comfort with reading and appraising research articles. The comfort level in both sites varied depending on previous exposure and education level. Not surprisingly, nurses with graduate education and nurses with previous exposure to research expressed greater comfort in reading and appraising research articles. Diploma and baccalaureate prepared nurses, on the

other hand, expressed limited comfort with this skill set. Diploma prepared nurses cited an absence of any formal training, whereas baccalaureate prepared nurses attributed their discomfort to a lack of practice. However, nurses' comfort with research articles did appear to improve through attending journal clubs.

Barriers to Journal Club. When asked what barriers prevented nurses from attending journal clubs, nurses identified competing family interests, feeling tired at the end of a 12-hour shift, living far from the hospital, availability of parking, and not wanting to come work unless they are getting paid. One barrier that emerged in both sites was nurses feeling intimidated by the idea of a journal club. One nurse relayed the following:

One [nurse] said to me she didn't think she was smart enough to go to the journal club. She thought people would be over-educated, talking over her head and she felt that she probably wouldn't fit in. But she was pleasantly surprised that it wasn't like that at all. She had worked in the unit for years so why would she feel that way? (Nurse 2, Site One)

In addition, when nurses felt the topic was relevant to their practice, more participants attended journal club meetings.

Limitations

One limitation of this study was the principal investigator's position as a staff nurse in one of the research sites (Site One). As is well documented in research literature (Coghlan, 2001; Coghlan & Casey, 2001), the researcher's pre-existing relationship with study participants positioned him as an insider. Some of the limitations of being an insider can include the researcher's prior assumptions and being denied deeper access to participants (Coghlan, 2001; Coghlan & Casey, 2001). In order to counteract this potential limitation, this study was

implemented across two study sites: one site in which the researcher was employed, and another site in which the researcher worked only infrequently. Interestingly, in comparing the findings across both study sites, it appears that being an insider was an asset and not a barrier in this case study. In fact, the principal investigator was able to gain richer data as an insider than as an outsider. For example, twice as many nurses participated in journal clubs in Site One than in Site Two. In addition, the interview participants in Site One had attended and gained experiences from a greater number of journal club meetings. Hence, all of the themes that emerged from the data (whether positive or negative) were expressed more frequently in Site One (where the researcher worked and was well known) than in Site Two (where the researcher was less known).

In addition, although KT in the form of practice changes appears to have occurred as a result of journal clubs, this study falls short of being able to measure or quantify the degree of knowledge translation. Another limitation was the principal investigator's dual position as both the journal club leader and researcher. As journal club leader, the principal investigator was often leading discussions which could influence data analysis. One strategy to counteract bias is asking a colleague to analyze data (Coghlan, 2001). For this reason, the researcher tested the reliability of his coding by using a coding-comparison query in NVivo9 which demonstrated 95% agreement in coding between the principal investigator and his colleague. Greater than 80% agreement is deemed acceptable (Miles & Huberman, 1994). In addition, anonymous surveys were added after three months of journal clubs in order to augment the nurse-researcher's observations of journal clubs.

Discussion

This study explored the CPD of nurses in two ICU nursing journal clubs. The first research question in this study was: How do journal clubs affect the self-directed learning of ICU

nurses? In this case study, journal club affected the self-directed learning of ICU nurses by helping nurses to feel more confident in reading research. These findings corroborated the findings from previous research that had less transparent and rigorous methodologies (Goodfellow, 2004; Sheehan, 1994). However, confidence should be distinguished from competence. The journal clubs in this study were not designed to significantly improve critical appraisal competence of nurses and the data collection did not include any measures to assess nurses' competence with this skill set. In fact, although nurses reported feeling more confident in picking up and reading a research article, most of these nurses also expressed a need to improve their critical appraisal skills.

Journal clubs also affected the self-directed learning of ICU nurses by providing structure and incentive. The data suggests that by having a common topic, time, and venue for nurses to review and discuss pertinent research among peers provided the needed structure and incentive to pursue SDL and was a vehicle for KT. Some nurses in one of the study sites also reported reading more research outside of journal clubs as a result of their experience in journal clubs. The fact that many nurses felt more confident in reading research, and that some nurses read more outside of journal clubs, appears to support the link between feeling competent and motivation described by Ginsberg and Wlodkowski (2009). However, no causative link can be made between these two separate findings in this study.

The second research question in this study was: What kind of community is created within journal clubs? Journal clubs were characterized by a collaborative and collegial community of nurses. This finding was most evident in the overwhelming number of nurses who expressed the importance of discussion among bedside colleagues. In addition, journal clubs discussions were constructive and focused on improving practice. Within journal clubs, although

many differing points of view were expressed, the focus of the discussion for participants appeared to be to learn from each other, negotiate whether research results were applicable to their patients and worthy of changing practice, and ultimately to improve patient care within the unit. Lastly, the journal clubs were valued as important CPD by participants. Although nurses had differing points of view about the purpose of journal clubs, almost all of the nurse participants expressly stated that they valued journal clubs as important for themselves as professionals and/or the unit.

Two of the three characteristics of learning communities were found in journal clubs (a collaborative culture, and nurses engaging to improve practice). However, the third characteristic (a shared mission amongst participants) was not found. As a result, the journal clubs in this study did not create a learning community as described by Lieberman (2009).

The third research question in this study was: How do journal clubs affect nurses' clinical practice? Journal clubs in this case study affected the clinical practice of participants at an individual level. Nurses reported changing their practice in individual interviews and focus groups. These findings were corroborated by interviews with nurse educators and pharmacists. Changes in clinical practice were described as both subtle and more obvious. Subtle practice changes included changing the nature of bedside conversations among nurse participants. More obvious practice changes included examples of nurses directly applying what they had learned within journal club at the bedside in caring for their patients. Previous research has described clinical practice changes as an outcome of journal clubs (St. Pierre, 2005; Kartes & Kamel, 2003; Kirchoff & Beck, 1995) but these studies did not include a rigorous and transparent methodology. In addition, the example of practice changes found in this study supports Estabrooks's (2003) assertion that communities of practice are a promising environment to

enhance and study KT. However, the data from document analysis of staff and unit council meeting minutes and from interviews with physicians, pharmacists and nurse educators demonstrates that the journal clubs' influence on practice was limited to the level of individual nurses, and did not affect unit wide practices or policies.

Upon reflection, the nurse-researcher in this study was acting as a champion of evidence-based practice which may have led to the success of the journal clubs in enhancing knowledge translation. The nurse-researcher in this study had a positive pre-existing relationship with the nurses in one of the study sites which likely contribute to the fact that there were more journal club participants in that study site. This finding supports the notion that champions in the workplace play a pivotal role in enhancing knowledge translation among nurses (Aita et al. 2007; Bellman et al. 2010; Melnyk et al. 2004; Thompson et al. 2006). In addition, the journal clubs in this study were a part of a master's thesis project and therefore the journal club organizer had a vested interest. As such, the journal clubs probably benefitted from more time, effort and attention to detail than they otherwise would have received. Both of these factors undoubtedly influenced the outcome of the journal clubs and of the results of this study.

Journal clubs also affected the clinical practice of nurse participants by providing a structure for reflecting-on-practice. Nurses reported reflecting individually and also among peers not only within, but also outside of journal clubs as a result of experiences within journal clubs. Controversial topics provoked greater discussion and were more frequently reported in examples of nurses' reflecting-on-practice. No other journal club research has described nurses' reflecting-on-practice.

The barriers to EBP identified in this case study include journal club participants feeling overwhelmed with the volume of research available, a perceived lack of critical appraisal skills, and uncertainty with respect to how research results could be implemented into practice. These barriers have been well documented elsewhere (Brown et al., 2009; Koehn & Lehman, 2008; Pravikoff, et al., 2005). In previous research, it has been suggested that nurses can overcome many of these barriers by consulting with colleagues such as librarians and clinical nurse specialists (Krom et al., 2010; Thompson et al., 2001). Given the barriers to EBP, such resources are critical in helping nurses to transition from traditional models of practice to EBP models (Krom et al. 2010; Thompson et al. 2001). Therefore, the journal clubs in this study might have benefited from more intimate involvement of graduate prepared nurses and hospital librarians.

Another important aspect of enhancing research use is targeting nurses' attitudes towards EBP (Estabrooks, 2003). Prior research (Melnycyk et al. 2004) has demonstrated a relationship between nurses' beliefs about the importance EBP and the degree to which nurses' practices are grounded in evidence. Therefore, even the very best of resources, such as librarians and graduate prepared nurses, will probably go unused without the buy-in of bedside nurses. The results of this study suggest that journal clubs are one KT strategy that can be successful in both engaging and empowering nurses in evidence-based practice at the grass-roots level.

Conclusions

In this case study, journal clubs affected the self-directed learning of many ICU nurses by providing needed structure, incentive, confidence, and motivation to read research articles. Furthermore, journal clubs created a community of peers who worked collaboratively to improve practice, led to KT in the form of reported changes in clinical practice, and fostered reflection-on-practice among many nurses. Those wishing to enhance KT and EBP among bedside nurses

should consider journal clubs as one method that has the potential to do so at the grass-roots level. However, the journal clubs in this study were only successful in changing practice at an individual level and did not change any unit-wide policies or practices. Future research should explore strategies to change unit and/or hospital-wide policies or practices through journal clubs. For example, journal clubs could be integrated with hospital quality improvement committees that have the capacity to influence changes in practice of the entire unit and/or hospital.

The majority of nurse participants in this study expressed a feeling of uncertainty in their ability to critically appraise research and implement evidence in practice. Therefore, the journal club was not an alternative to other methods of enhancing KT for EBP such as the involvement of clinical nurse specialists. Rather, journal clubs should be used alongside these other strategies. In developing journal clubs, the most relevant topics should be selected to garner greater participation levels. Additionally, particular attention should be paid to ensuring that all nurses feel comfortable participating in journal clubs. Future research should also explore the use of emerging communication technologies such as Skype within journal clubs. Such technologies may help to bolster participation in journal clubs by providing access to nurses who may want to participate but who cannot physically attend the journal club meetings in person.

Table 1: *Journal Club Topics*

<i>Site 1</i>	<i>Site 2</i>
<ul style="list-style-type: none">• Delirium	<ul style="list-style-type: none">• Paediatric Trauma and
<ul style="list-style-type: none">• End-of-Life in the ICU	<ul style="list-style-type: none">Family Presence
<ul style="list-style-type: none">• Multi-Disciplinary	<ul style="list-style-type: none">• Acute Head Injury
<ul style="list-style-type: none">Communication	<ul style="list-style-type: none">• End-of-Life in the ICU
<ul style="list-style-type: none">• Fluid Resuscitation	<ul style="list-style-type: none">• Sedation
<ul style="list-style-type: none">• Obesity	<ul style="list-style-type: none">• Central Line Infections
<ul style="list-style-type: none">• Re-evaluation of	<ul style="list-style-type: none">• Obesity
<ul style="list-style-type: none">Sedation Vacations	

Table 2:

*Nurse Interview
Participants*

<i>Site 1</i>	<i>Site 2</i>
Individual Interviews: Nurses 1-3 (n=3)	Individual Interviews: Nurses 1-3 (n=3)
2 Female	3 Female
1 Male	Diploma-MScN
Diploma-MScN	2-33 years' experience
13-28 years' experience	Attended 2-4 journal clubs
Attended 3-4 journal clubs	
Focus Group: Nurses 4-11 (n=8)	Focus Group: Nurses 4-6 (n=3)
2 men and 6 women	All women
Diploma-Baccalaureate	Diploma-MScN Student
2-25 years' experience	5-20 years' experience
2 attended 1 journal club	1 attended 2 journal clubs
4 attended 2 journal clubs	2 attended 1 journal clubs
2 attended 3 journal clubs	

<i>Theme</i>	<i>Definition</i>	Table 3: <i>Themes</i>
Incentive	Providing nurses with needed incentive and structure to read research and journal articles	
Confidence	Helping nurses to feel more confident in reading journal articles and research	
Community	Journal club providing a collaborative community of nurses engaging to improve practice	
Changing Practice	Subtle and obvious changes in practice as a result of the journal club	
Reflection	Descriptions of nurses reflecting on practice as a result of the journal club	
Barriers		
- to evidence-based practice	Barriers to evidence-based practice identified by participating nurses	
- to the journal club	Barriers to the journal club identified by nurses	

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