Changes in Beliefs about Evidence-Based Practice
Due to Participation in a Unit-Based Journal Club

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Abstract

Background: Providing care in the hospital has become more complex and specialized. In order to keep up with the demand of ever increasing knowledge about evidence based practice, patient care providers are encouraged to read, understand, and implement the current literature. One strategy to update knowledge of current evidence is participation in a journal club.

Purpose: The purpose of this study was to test the following hypothesis: Participation in a unit-based journal club will improve perspectives about evidence-based practice as evidenced by an increase in scores on the EBP Belief Scale.

Design: A quasi-experimental study was conducted with pre-post comparison using a survey of EBP beliefs.

Methods: Conducted on an ortho/trauma acute care unit of an academic medical center in the South Eastern United States, the study included a pre-survey, 4 months of in person journal club meetings, and a post-survey to evaluate changes. Nine participants completed the pre and post survey.

Results: A statistically significant improvement was found between pre and post scores ($t=3.57$, $df=8$, $p=0.0007$) on the EBP Belief Scale following participation in this monthly journal club.

Conclusions: Participation in this monthly journal club significantly improved the nurses' beliefs in evidence based practice. Instituting journal club meetings on a unit can increase nurses' beliefs in evidence based practice and therefore may improve care for patients.

Key Words: Journal Club, Evidence-based practice, Quasi-Experimental Study, Acute Care

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Introduction

Medicine and nursing are a constantly changing area and the Institute of Medicine (2010) recognizes that “care within the hospital...has become more complex” (p. 6). Additionally, “...the nursing profession must adopt a framework of continuous, lifelong learning...” (p. 31). Nurses who graduated from nursing school 15, or even 5 years ago, may lack the current awareness of best practices for care and medication standards unless they continually update their knowledge. Even if they update their knowledge it is not well known whether the nurse will incorporate the evidence-based practices (EBP) into their care.

One way nurses can update their knowledge is through membership in a professional nursing organization and reading the journals that often accompany the membership. However, only a small number of nurses belong to organizations; in 2003 only 10% of nurses belong to the American Nurses Association (ANA), the largest professional organization for nurses (DeLeskey, 2003), this small number points to the low probability that nurses are receiving, and thus reading the journals, stocked with the most up to date clinical, research, and medical information. The greatest barriers reported for not joining nursing associations are cost and time (Esmaeili, Dehghan-Nayeri, & Negarandeh, 2013). A common historical method to overcome the cost of joining a nursing organization, and encouraging reading and discussing the current literature from many organizations and periodicals, is through the creation and maintenance of a journal club. “A journal club can serve as a vehicle for the sharing and discussion of research articles. More than this, however, it can be used as a tool to develop knowledge and skills, such as critical thinking and evidence-based protocol development, which represent the overlap

between research and expert clinical practice” (Turner & Rosewall, 2011, p. 130). A belief in EBP is important when attempting to update nurse practice. Therefore, this project aims to answer the question: Does nurse participation in a unit-based journal club result in an improved attitude toward evidence-based practice as measured by the EBP Belief Scale?

The Ottawa Model of Research Use (OMRU) is the theoretical framework that was used in the implementation of the journal club and subsequent assessment of outcomes including any change in EBP beliefs (see Appendix A). This is a three stage model beginning with assessing barriers and supports. This first stage encompasses the process of the literature review as well as identifying potential adopters and the practice environment. The second stage of the project, “Monitor Intervention and Degree of Use” requires managing barriers, transferring knowledge, and following up on learning. The goal of the journal club is increased belief in EBP and the adoption of the best practices identified and discussed from the literature. This stage is a good opportunity to evaluate the journal club outcomes through assessing intention and actual use of learning from the club articles and discussion. The third stage of OMRU, “Evaluate Outcomes,” is a long term evaluation based on patient, provider, and system changes and outcomes (Graham & Logan, 2004; Sudsawad, 2007).

The research question for this project is: Does nurse participation in a unit-based journal club result in an improved attitude toward evidence-based practice as measured by the EBP Belief Scale?

Review of the Literature

The literature was reviewed to identify the importance of evidence-based practice and the best practices for conducting a journal club with clinical nurses in a hospital setting.

Evidence-Based Practice

Evidence-based practice is using the best known method of providing care to patients or “...the conscientious and judicious use of current best evidence in conjunction with clinical expertise and patient values to guide health care decisions” (Titler, 2008, p. 113). EBP is rapidly becoming the standard of care in the healthcare field. Patients are seeking the best, most up-to-date, medications, procedures, and care. Insurance companies are taking note and may deny payment for complications if EBP or guidelines are not followed (Melnik & Fineout-Overholt, 2015, p. 7). Knowing the best practices evidence and using it in everyday patient care has been shown to increase quality of care, improve patient outcomes, reduce cost, and homogenize care practices over various locations (Melnik & Fineout-Overholt, 2015, p. 6).

The modern EBP movement was started in the 1970s by a British epidemiologist, Archie Cochrane. He believed that medical decisions should be supported by evidence from studies that were conducted with rigorous structure and systematically reviewed in comparison with other studies to find the best evidence for the care provided (Melnik & Fineout-Overholt, 2015, p. 6). Cochrane’s name is now best known for the Cochrane Review – a repository for the systematic reviews that lend to knowledge of best practices for clinical care.

Reviewing new research articles and systematic reviews can influence care by informing the practice of the reader. An example of awareness and use of new and updated EBP is the “Practice Alert” regarding blindly inserted feeding tubes released by the American Association of Critical Care Nurses (AACN). The alert was published and distributed through various means as a practice guideline; however, through an online survey only 55% of the respondents were aware of the practice alert and only 29% of those adopted all the practices described in the literature as important to care (Bourgault, et al., 2014). The failure to update and implement the current practice standard put patients at risk for harm.

Nurses, and other care providers, who fail to update their current knowledge and do not know the current best practice may provide care that is outdated and dangerous. The following is a seven step implementation process for EBP:

0. Cultivate a spirit of inquiry within an EBP culture and environment.
1. Ask the burning clinical question in PICOT format.
2. Search for and collect the most relevant best evidence.
3. Critically appraise the evidence. (i.e., rapid critical appraisal, evaluation, and synthesis).
4. Integrate the best evidence with one's clinical expertise and patient's preferences and values in making a practice decision or change.
5. Evaluate outcomes of the practice decision or change based on evidence.
6. Disseminate the outcomes of the EBP decision or change. (Melnyk & Fineout-Overholt, 2015, p. 10)

These steps can be used to increase the knowledge and practice of clinicians at any level. The Journal Club encompasses all steps. The preparatory stages of 0-2 are conducted before the in-person meetings with input from the participants, stage 3 is done during the journal club meeting, and step 4 is discussed during the meeting and individually implemented. Step 5 evaluates the implementation and influence the journal club has had on clinical care. Step 6 includes the sharing of the practices with those outside the journal club group and influencing the culture of care.

Conducting an Evidence-Based Journal Club

History. The first organized journal clubs are attributed to Sir William Osler in Montreal, Canada in 1875 to share limited literature resources (Lachance, 2014; Mazal &

Truluck, 2014). Over time many professional disciplines in medicine have adopted the use of journal clubs to improve knowledge of providers and to provide the most up-to-date evidence-based care for patients. These include medicine, nursing, occupational therapy, respiratory therapy, and radiation therapy both at the student and practitioner level (Lachance, 2014).

Outcomes. Journal clubs allow participants the opportunity to review the most current published literature and identify and incorporate research-based evidence into patient care. A review of literature at the staff nursing level allows current knowledge to be implemented sooner to provide the best, most up-to-date care to patients (Wiggy, 2012). Lachance (2014) notes that “...using journal clubs as a teaching strategy for nursing education contributes to skill development in professional discussion, research appraisal, and applying learned results to clinical practice (p. 560).”

Leadership and participants. Results from the literature show that journal clubs are best led by a strong, informed leader who can direct the group through the article discussion, and the group leader should be augmented by knowledgeable presenters and subject-matter experts as needed, including librarians, statisticians, advanced practice providers, and researchers (Deenadayalan, Grimmer-Somers, Prior, & Kumar, 2008; Honey & Baker, 2011; Lachance, 2014; O’Nan, 2011). Rogers (2009) states that a Clinical Nurse Specialist is a great selection for the leader of journal club meetings.

Participants in the journal club should be from the same or similar clinical areas (Deenadayalan et al. 2008; Honey and Baker 2011), and may include interprofessional make-up to “...promote interdisciplinary collaboration, team building, and professional discussions” (Lachance 2014, p. 561). Included participants should be limited to a small group to allow for productive conversations (Honey & Baker, 2011; Rogers, 2009).

Article selection, distribution, and critique. Article subjects should relate to the practice area and members should have input regarding the topic or final decision on the specific article to be reviewed (Deenadayalan et al., 2008; Honey & Baker, 2011). Articles should be provided before the meeting to allow members to review in advance (Deenadayalan et al., 2008; Honey & Baker, 2011; Lachance, 2014); Deenadayalan et al. (2008) recommends use of the internet to deliver articles to participating members.

A Critical Appraisal Tool (CAT), or another guide to critiquing literature, should be used to structure the meeting and critique (Deenadayalan et al., 2008; Honey & Baker, 2011; Lachance, 2014). Honey & Baker (2011) points out “...use of a structured critical appraisal tool (CAT) and set of guidelines for critically appraising research...is a common feature of the successful journal clubs.”

Meetings and attendance. Meetings should be regularly scheduled, preferably monthly, and at members’ place of work (Deenadayalan et al., 2008; Honey & Baker, 2011; O’Nan, 2011). The journal club and meetings should have an established goal and clear objectives (Deenadayalan et al. 2008; Honey and Baker 2011; Lachance 2014), and should be limited to 60 minutes of uninterrupted time (Honey & Baker, 2011; O’Nan, 2011). Deenadayalan et al. (2008) recommends required and recorded attendance. However, Honey & Baker (2011) recommends voluntary attendance for better participation.

Organizational support is important to ensure success (Honey & Baker, 2011; O’Nan, 2011; Rogers, 2009). Participants are much more likely to attend if there are incentives that may include food or continuing education credit hours (Deenadayalan et al., 2008; Honey & Baker, 2011; Lachance, 2014; O’Nan, 2011).

Follow-up/outcome evaluation. Meetings should be concluded by putting the article in

the context of the clinical practice, so participants can see how the evidence can influence their own work (Deenadayalan et al., 2008; Lachance, 2014). Further evaluation should be done to ensure the journal club is effective in its specific location. Outcomes of knowledge, skills, attitudes, behaviors, and translating these into practice help show if the journal club has been effective (Deenadayalan et al., 2008; Honey & Baker, 2011). Lachance (2014) remarks “...nurses are more receptive and open-minded to evidence-based practices when they are involved in journal clubs.”

Discussion

This literature review focuses both on the importance of EBP and helps identify the best evidence-based practices of running a journal club with clinical nurses in a hospital setting. Many gaps exist in the literature regarding journal clubs; there are limited amounts of original research in the past 10 years and no available randomized controlled trials. As noted in the professional journals there is “...scant published literature regarding the processes of conducting an effective journal club in a health setting” (Deenadayalan et al., 2008, p. 905) and “...much of the information is based on opinion and not empirical research” (Rogers, 2009, p. 193). However, evidence found in the existing literature should be effective in assisting with the creation, conduction, and assessment of a new nurse journal club in a clinical setting. The journal club is historically seen as an effective way to provide teaching on the current evidence for practice. This study examined the influence a journal club has on a participant’s beliefs about EBP. The journal club was conducted according to the evidence and helped answer the primary study question of: Does nurse participation in a unit-based journal club result in an improved attitude toward evidence-based practice as measured by the Evidence-Based Practice Belief Scale?

Methods

Purpose of the Study

The purpose of this study was to test the following hypothesis: Participation in a unit-based journal club will improve perspectives about evidence-based practice as evidenced by increase in scores on the EBP Belief Scale.

Definition of Terms

Evidence-based practice (EBP). "...the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual expertise with the best available external clinical evidence from systematic research" (Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996).

Journal club. "...activity employed by education and healthcare institutions to facilitate learning about study design, to teach critical reading of the literature, and to help trainees and practitioners keep abreast of new developments in their field" (Hinkson, Kaur, Sipes, & Pierson, 2011).

Critical Appraisal Skills Programme (CASP) Checklist. Eight critical appraisal tool checklists "...designed to be used when reading research" (CASP, 2014; see Appendix B). These appraisal tools will be used in the journal club meetings to frame the discussion and encourage learning.

Huddle. Five minute nursing staff meeting, conducted at change-of-shift, to discuss previous and upcoming shift issues or events on the study unit.

Evidence-Based Practice Beliefs Scale. "16-item EBP Beliefs Scale that allows measurement of a person's beliefs about the value of EBP and the ability to implement it" (Melnik, Fineout-Overholt, E, & Mays, 2008). This is the measurement survey for

identifying outcomes for this study.

Research Design

A quasi-experimental study was conducted with pre-post comparison using a survey of EBP beliefs.

Measures

The *EBP Beliefs Scale* (Melnik & Fineout-Overholt, 2015) was used to assess staff and participants before and after journal club participation. The *EBP Beliefs Scale* is a sixteen item Likert-type scale assessing beliefs about the usefulness of Evidence Based Practice to improve patient care. According to Melnyk and Fineout-Overholt (2008), “Scoring of the instrument consists of reverse scoring two negatively phrased items and then summing responses to the 16 items for a total score that ranges between 16 and 80” (p. 210). This instrument has a Cronbach’s alpha ($>.85$) showing high reliability (See Appendix C for instrument). Permission was granted to use the *EBP Beliefs Scale* by Ellen Fineout-Overholt (Appendix D).

Pre-study demographic criteria collected included gender, age, race, job title, highest degree earned, number of years as a nurse, number of years at AMC, and number of years on unit (Appendix E). The post-study survey requested information on number of journal meetings attended; whether the participant recommended topics; interest in continuing journal club meetings; whether the participant read the articles prior to the meeting; and benefits and deterrents to participation in journal club meetings (See Appendix F).

Setting

The study was conducted at a 584 bed academic medical center (AMC) in central Virginia that includes “...a hospital, level I trauma center, nationally recognized cancer and heart centers and primary and specialty clinics” (UVA Health System, 2015). The patient care unit

selected for the study is the acute care orthopedic and trauma unit with a clinical staff of 40 RNs, 18 patient care assistants/technicians, and 23 physician providers. The unit has 30 beds and regular patient census of 24-26 patients with 35-50% turn-over each week day.

Approval to conduct study was acquired from the Nurse Manager on the ortho/trauma floor (see Appendix G for approval letter).

Description of Sample

Eleven staff members participated in at least a portion of any journal club and finished the pre-survey demographics. All participants in the journal club study were Registered Nurses with experience varying from two months to 42 years ($n=11$, $M=9.62$, $SD=12.65$, Table H1). Most of the participants were female (81%), outnumbering the male participants 9:2. The age of the participants ranged from the early 20s to over 45 years, with the majority of the participants over 35 (Table H1). Education level of participants ranged from Diploma through Masters with the majority of participants either Associate ($n=4$, 36.4%) or Bachelors ($n=4$, 36.4%); one was Diploma prepared (9.1%), and two were Masters prepared (18.2%; Table H1). Clinician level ranged from Clin1 to Clin3 with the majority of the participants in the Clin2 level ($n=6$, 54.5%). The sample demographics were representative of the unit as a whole.

Two participants were lost to follow up and did not respond to requests to complete the post-survey. One individual attended the beginning of the first meeting, filling out the pre-survey, but patient needs precluded participation in a majority of that meeting and no further participation. The other loss to follow up was an individual with less than 3 months experience and participation in 2 meetings. The final sample used for data analysis was nine registered nurses.

Data Analysis Plan

Data from the 16 question *EBP Beliefs Scale* was analyzed using IBM SPSS 22 statistical software. Descriptive statistics were computed on the demographic data. Pre and post scores of the participants, organized by variable were compared using a paired *t*-test to determine change in scores on the *EBP Beliefs Scale*.

Protection of Human Subjects

This protocol was submitted to, and approved by, the Institutional Review Board (IRB) for Social and Behavioral Sciences (SBS). The highest risk was loss of confidentiality of participants. Confidentiality was protected by recording and analyzing the data electronically and using secure sites to store all information. Participants selected a random number identifier that they were required to write on all survey requests. A name/number list was maintained on a separate protected spreadsheet in case any participant forgot their assigned number. Once the study was complete the spreadsheet was deleted to limit risk of confidentiality loss. All paper surveys were scanned into the password protected electronic storage drive and then destroyed. See Appendix I for the IRB protocol submission and consent forms.

Program Description

Recruiting. Clinical Staff was recruited using flyers posted in high traffic areas including the day room and bathrooms. Additionally the program was announced in daily huddle meetings of off-going and on-coming staff each morning and evening. Interested individuals were asked to sign up for scheduled dates they would be most likely to attend. Informed consent for participation in the study was obtained at the beginning of the first meeting, prior to survey completion.

Preparation. Meetings were scheduled for one hour and conducted on days with highest participant attendance for work. The meetings were conducted twice each month, with day shift,

at noon, through input from staff for most likely time to allow participation. Three articles were selected and reviewed by the author prior to the first meeting and selection of one article was made by the staff at the meeting, thereafter the participants were asked to provide input on the selection of a single article/topic for review in the meeting through email or on a posted form in the day room. The selected article was emailed to participants for their review prior to subsequent meetings. Articles for the study were based in research, not opinion, and pulled from nursing literature. The articles focused on topics of interest to the unit. Critical Appraisal Tools (CAT) were available to assist the structure of the meeting.

Snacks were provided at each journal club meeting to encourage attendance, these were provided by the primary investigator for each meeting.

First Meeting. On arrival all participants were asked to select a random number from a bowl and write it on the provided survey, this number was used throughout the study for identification and to evaluate effectiveness of intervention for each individual. Ten minutes was allocated for participants to complete the EBP Beliefs Scale (Melnik & Fineout-Overholt, 2015) and demographic data survey. The three article topics selected for the first meeting were provided to the participants and through a popular vote a single article was selected for review. Ten minutes was allotted for participants to review the article.

The selected article was reviewed as a group using a CAT, specifically the Critical Appraisal Skills Programme (CASP; see Appendix B for sample tool; CASP, 2014). Following the review the participants were encouraged to discuss how the information in the article could influence their own practice and patient care.

Subsequent Meetings. In the subsequent two meetings participants were asked to respond to an email or board post in day room about the next meeting topic and an article was

selected and provided to members 4-7 days before the journal club meeting via email. The journal club was run similar to the first meeting with the exception of the survey completion and providing time to review the article. Participants were not turned away if they had not read the article, but reading was encouraged. When new participants showed up at the journal club meetings, they were asked to complete the pre-survey prior to participating.

Final Meeting. The final meeting was conducted similarly to the previous meetings but ten minutes were set aside at the end for participants to fill out the EBP Beliefs Scale (Melnik & Fineout-Overholt, 2015) and qualitative survey including their random number assigned at the first meeting and number of journal clubs in which the individual participated.

Procedures

At the beginning of the first journal club meeting the participants were asked to complete the survey tool including demographics and the EBP Beliefs Scale (Melnik & Fineout-Overholt, 2015), this ensured data was collected before any interventions were conducted.

The intervention, participation in journal club meetings, occurred over four months before the post survey was conducted. Following the final meeting the participants were again surveyed using the same EBP beliefs scale tool. In addition to the scale, data was collected to determine how many journal club meetings the respondent participated in. If participants that attended at least one meeting were not present at the final meeting an attempt to reach them through email and in-person contact was made.

Results

Nine participants completed the post-survey and questionnaire for an 81.8% completion rate. Participants attended between one and four journal club meetings ($n=9$, $M=2$, $SD=1.24$; Table H2). Four of the nine respondents reported that they recommended a topic for the meeting

(44.44%; Table H2). All but one of the participants responded that they would or maybe would be interested in continuing the Journal Club meetings (88.89%; Table H2). Articles were provided via email prior to the meetings, two of the nine (22.22%) respondents reported always reading prior to the meetings they attended, three (33.33%) reported they sometimes read, and four (44.44%) reported they did not read prior to the meetings (Table H2).

Evidence-Based Practice Beliefs Scale Data

Pre-survey results revealed scores that ranged between 53 and 75. Post-survey results ranged from 61 to 76. A paired t test was conducted and the results indicated that the mean of the EBP Beliefs Scale score on the post-test ($M = 67.56$, $SD = 5.03$) was significantly higher than the mean of the EBP Beliefs Scale score on the pretest ($M=60.68$, $SD=6.51$; $t = 3.57$, $df = 8$, $p < 0.01$; 95% CI 2.40, 11.16; Table H3).

There was no significant change in pre/post scores based on time as an RN; however, nurses with an Associate's degree attended more meetings (total person hours = 10) and demonstrated greater improvement from pre to post journal club participation ($t=6.40$, $df=2$, $p<0.05$). Nurses with a Bachelor's degree spent 8 total person hours in journal club but demonstrated no statistically significant change in their pre/post scores ($t=1.98$, $df=3$, $p=0.142$). Nurses with a Master's degree spent 4 total person hours in journal club meetings and demonstrated no significant change in their pre/post score ($t=0.60$, $df=1$, $p=0.656$; Table H2, H3).

Those nurses who attended more meetings began with a lower pre-score compared to those who attended fewer (60.60:61) and increased their score higher than those who attended fewer meetings (67.6:67.5). The data revealed a trend for those who attended more meetings to demonstrate a greater increase in score ($t=2.75$, $df=4$, $p=0.052$; Table H3).

Participation in the journal club meetings was shown to have an overall improvement in mean scores and variation of answers (SD) on all but one area investigated by the EBP Beliefs Scale. Specific improvements included an increase in knowledge on the steps of EBP, a belief in critically appraising to the literature as an important step, an increased belief in ability to search the literature in a time efficient way, an increased belief that implementation of EBP will improve patient care, an increase in knowledge on how to measure the outcomes of clinical care, and an increased belief in the ability to access the best resources to implement EBP (Table H4).

Discussion

Although the sample size was small the data revealed a statistically significant improvement in outcomes based on participation in journal club. Therefore, more exposure to discussions of evidence can lead to an increase in an individual's beliefs in EBP.

Nurses with an Associate's degree had a significant change in their pre/post scores indicating a greater improvement in beliefs in EBP. These nurses were also more likely to attend the meetings than others.

Participation in meetings, education level, and years of practice (Table H3) were all examined statistically, but were not found to be related to improvement in belief in EBP. Additional study with larger sample size will help to validate the findings.

The Journal Club meetings provided an opportunity for nurses to review the literature on areas of nursing that interested them or related to the needs of the unit. Four articles were reviewed by the Journal Club, topics covered included perceptions of Nurses' caring behaviors, burnout and compassion fatigue, horizontal violence, and predisposing factors for cerebrovascular accidents (Appendix J). Each of these articles provided occasions to dialogue on subjects that directly influenced the study unit. The participants took the information from the

meetings and debated how they could use the information in their own practice and to teach others on the unit. Two Clinician Level 1 Nurses on the unit are already taking the information learned in the journal club to implement a study with interventions to reduce horizontal violence within the nursing staff. This is tangible evidence that the journal club has positively influenced the nursing staff and will continue to positively influence the care environment.

Data was not collected on the specific journal club meetings that participants attended in order to protect confidentiality, so the effect of each of the different discussions or articles was not quantified. In addition, it is important to note that the two articles that were selected based on participant feedback were focused on interpersonal issues between Nurses. Most Journal Clubs focus on clinical topics and research; however, even with the selection of relationship topics there was still a notable change in pre- and post-scores on EBP beliefs. This finding may indicate that a dialogue on research as a whole and use of focused discussions using critical appraisal tools may have been more important than the topic of the article to promote confidence in EBP.

Use of a CAT for the meetings was instrumental in facilitating the discussions. The best way to use the tools was assigning each person a question around the discussion table. Even if they had not read the article they were usually able to find the answer by skimming the article. Once they had shared a response the floor was opened for any other participants to share their interpretation of the question and for discussion on differing opinions. This organization allowed all journal club attendees an opportunity to become an active part of the conversation on EBP.

Journal club meetings were held in the Dayroom/Breakroom of the study unit and often interrupted or supplemented by other staff members present in the room. Additionally the meeting attendees were often interrupted for patient care activities. Due to these interruptions the

meetings were often started late, ended early, or paused in the middle, despite the disturbances there was still a significant increase in the EBP beliefs score. Further research is needed to determine the ideal length of time for a meeting when a meeting is held during a nurse's shift.

Eighty-nine percent of participants reported interest in continuing the journal club meetings indicating a desire for continuing educational growth. The author will work to facilitate a continuation of this Journal Club model while actively transitioning the leadership to a unit based leader.

This study shows how journal club positively influence the nursing staff through education on current best practices, have the potential to influence patient care, and can improve the environment of care for the clinical staff. These improvements outweigh the costs required to implement such a program in any patient care environment.

Strengths and Limitations of Design

The strengths of this project are that an established, reliable measure of EBP beliefs was used for data collection. Since most of the literature on journal clubs has been anecdotal case studies, this quasi-experimental study will contribute to the available body of literature for evaluating the effect of Journal Club participation on EBP beliefs. In addition, this was a low cost project, requiring payment only for use of the instrument and snacks for the meetings.

Limitations include loss to follow up of two participants, 18.2% of the original sample did not complete the post-survey and may have skewed the results. Small sample size was also a limitation, the meetings were held twice weekly and meeting membership often was only 2-3 persons, this limit in participants may have narrowed the discussions. High clinical operational tempo was also a limitation for the actual process of the journal club. Patient needs and patient turn-over limited the time nurses and clinical staff could be away from the bedside resulting in

late arrivals and interruptions of the meetings.

Future Study Opportunities

Although the results of the study showed an increase in EBP beliefs despite multiple interruptions, a future study should attempt meetings with few to no interruptions to compare outcomes. Small sample sizes may provide unreliable results; a similar study with larger sample size will be needed to verify the results. In addition, the literature reported that 1 hour was the best time to spend in a journal club meeting, further research should be conducted to determine if 1 hour is the ideal time for a meeting or if 30 or 45 minutes would be more effective when a meeting is held during a nurse's shift. A time controlled RCT should be done to find the appropriate amount of time required to positively influence EBP beliefs. An intervention of greater duration may show an increased change, this is another opportunity for future research. Finally, the literature anecdotally recommended small interprofessional groups would be advantageous for journal club meetings, this study had only RNs volunteers. Future research should incorporate additional professions and a variety of journal publications.

Nursing Practice Implications

Demonstration of increased beliefs in EBP due to participation in journal club provides evidence that can be used to encourage others within the unit to participate in the meetings and justifies the continuation of the meetings. The author provided the data and recommendations to the unit manager to continue an ongoing journal club meeting either in-person and/or online to allow all interested staff to participate even when meetings are not conducive to their schedule. Select individuals have expressed interest in working toward this goal, the author will work with them and encourage continuation through the education coordinator of the unit based leadership.

The horizontal violence study and intervention project, already begun by journal club

participants, shows how journal clubs can positively influence staff nurses and their environment.

This study demonstrated outcomes that inspire the continuation and the creation of regularly scheduled in-person journal club meetings. The data collected contributes to the understanding of influence of journal club participation on EBP beliefs in clinical nurse staff.

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Appendix A

Ottawa Model of Research Use

Note: Reprinted from “Innovations in knowledge transfer and continuity of care,” by I. Graham and J. Logan, 2004, *Canadian Journal of Nursing Research*, 36, p. 9

Appendix B

Critical Appraisal Tool Example: Critical Appraisal Skills Programme

11 questions to help you make sense of a trial

How to use this appraisal tool

Three broad issues need to be considered when appraising the report of a randomised controlled trial:

- Are the results of the trial valid? (Section A)
- What are the results? (Section B)
- Will the results help locally? (Section C)

The 11 questions on the following pages are designed to help you think about these issues systematically.

The first two questions are screening questions and can be answered quickly. If the answer to both is *yes*, it is worth proceeding with the remaining questions.

There is some degree of overlap between the questions, you are asked to record a *yes*, *no* or *can't tell* to most of the questions. A number of prompts are given after each question. These are designed to remind you why the question is important. Record your reasons for your answers in the spaces provided.

There will not be time in the small groups to answer them all in detail!

These checklists were designed to be used as educational tools as part of a workshop

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(A) Are the results of the trial valid?

Screening Questions

1. Did the trial address a clearly focused issue?

☐

Yes

☐

Can't tell

☐

No

Consider: An issue can be 'focused' In terms of

- The population studied
- The intervention given
- The comparator given
- The outcomes considered

2. Was the assignment of patients to treatments randomised?

☐

Yes

☐

Can't tell

☐

No

Consider:

- How was this carried out, some methods may produce broken allocation concealment
- Was the allocation concealed from researchers?

Is it worth continuing?

Detailed questions

3. Were patients, health workers and study personnel blinded?

☐ Yes☐ Can't tell☐ No

Consider:

- Health workers could be; clinicians, nurses etc
- Study personnel – especially outcome assessors

4. Were the groups similar at the start of the trial?

☐ Yes☐ Can't tell☐ No

Consider: Look at

- Other factors that might affect the outcome such as age, sex, social class, these may be called baseline characteristics

5. Aside from the experimental intervention, were the groups treated equally?

☐ Yes☐ Can't tell☐ No

6. Were all of the patients who entered the trial properly accounted for at its conclusion?

☐ Yes ☐ Can't tell ☐ No

Consider:

- Was the trial stopped early?
- Were patients analysed in the groups to which they were randomised?

(B) What are the results?

7. How large was the treatment effect?

Consider:

- What outcomes were measured?
- Is the primary outcome clearly specified?
- What results were found for each outcome?
- Is there evidence of selective reporting of outcomes?

8. How precise was the estimate of the treatment effect?

Consider:

- What are the confidence limits?
- Were they statistically significant?

(C) Will the results help locally?

**9. Can the results be applied in your context?
(or to the local population?)**

☐ Yes ☐ Can't tell ☐ No

Consider:

- Do you have reason to believe that your population of interest is different to that in the trial
 - If so, in what way?
-

10. Were all clinically important outcomes considered?

☐ Yes ☐ Can't tell ☐ No

Consider:

- Is there other information you would like to have seen?
 - Was the need for this trial clearly described?
-

11. Are the benefits worth the harms and costs?

☐ Yes ☐ Can't tell ☐ No

Consider:

- Even if this is not addressed by the trial, what do you think?
-

Appendix C

EBP Beliefs Study

Survey Number _____ Example _____

Below are 16 statements about evidence-based practice (EBP). Please circle the number that best describes your agreement or disagreement with each statement. THERE ARE NO RIGHT OR WRONG ANSWERS.

	Strongly disagree	Disagree	Neither agree nor disagree	Agree	Strongly Agree
1. I believe that EBP results in the best clinical care for patients ¹ .	1	2	3	4	5
2. I am clear about the steps of EBP.	1	2	3	4	5
3. I am sure that I can implement EBP.	1	2	3	4	5
4. I believe that critically appraising evidence is an important step in the EBP process.	1	2	3	4	5
5. I am sure that evidence-based guidelines can improve clinical care.	1	2	3	4	5
6. I believe that I can search for the best evidence to answer clinical questions in a time efficient way.	1	2	3	4	5
7. I believe that I can overcome barriers in implementing EBP.	1	2	3	4	5
8. I am sure that I can implement EBP in a time efficient way.	1	2	3	4	5
9. I am sure that implementing EBP will improve the care that I deliver to my patients.	1	2	3	4	5
10. I am sure about how to measure the outcomes of clinical care.	1	2	3	4	5
11. I believe that EBP takes too much time.	1	2	3	4	5
12. I am sure that I can access the best resources in order to implement EBP.	1	2	3	4	5
13. I believe EBP is difficult.	1	2	3	4	5
14. I know how to implement EBP sufficiently enough to make practice changes.	1	2	3	4	5
15. I am confident about my ability to implement EBP where I work.	1	2	3	4	5
16. I believe the care that I deliver is evidence-based.	1	2	3	4	5

¹ patients can be an individual or family, a community, or system

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Permission for use granted by Ellen Fineout-Overholt 2 August 2015.

Appendix D

Request for and Permission to Use EBP Beliefs Scale

jessica schwinck <jls3ad@virginia.edu>

EBP Beliefs Scale Use for DNP Project

1 message

jessica schwinck <jls3ad@virginia.edu>

Tue, Jun 16, 2015 at 2:51 PM

To: arccllc2006@gmail.com

Dear Dr. Melnyk and Dr. Fineout-Overholt,

I am a doctoral student from the University of Virginia working on my Doctor of Nursing Practice (DNP) capstone tentatively titled: Changes in Beliefs about Evidence-Based Practice Due to Participation in a Unit-Based Journal Club.

I plan to lead and mentor a group of 20-30 Nurses and CNAs from an Acute Care Orthopedics & Trauma unit in a monthly journal club and would like to see if there is a change in their beliefs over 4 months of meetings.

I would like your permission to reproduce your EBP Beliefs Scale in my study.

I would be very grateful for your authorization. If you require any additional information, do not hesitate to contact me at the email or phone number below.

Sincerely,

Jessica Schwinck

jls3ad@virginia.edu

[253-212-6961](tel:253-212-6961)

118 University Gardens, Apt 1

Charlottesville, VA 22903

jessica schwinck <jls3ad@virginia.edu>

EBP Beliefs Scale Use for DNP Project

1 message

Ellen Fineout-Overholt <ellen.fineout.overholt@gmail.com>

Sun, Aug 2, 2015 at 2:51 PM

To: jessica schwinck <jls3ad@virginia.edu>

Hi Jessica. I received your permission form for student use of the EBPB scale in your academic project. This permission is solely for this academic project. Should you found this scale a good match for a future project, please email me and I will get you the latest permission forms. You have indicated that you wish to conduct your survey through pen and paper. I am forwarding a copy via this email for that use. As a reminder, electronic surveys are conducted solely through ARCC llc. As always, should you have any questions, please feel free to email them to me – always happy to answer.

Wishing you every success,
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

ellen.fineout.overholt@gmail.com

Appendix E

Pre-Study Survey

Survey Number Example**1. What is your gender?**

- a. Male
- b. Female
- c. I prefer not to answer

2. What is your age?

- a. 19 or less years of age
- b. 20 - 24 years of age
- c. 25 - 29 years of age
- d. 30 - 34 years of age
- e. 35 - 39 years of age
- f. 40 - 44 years of age
- g. 45 years of age or older
- h. I prefer not to answer

3. What is your race?

- a. White/Caucasian
- b. Black/African American
- c. Latino
- d. Asian
- e. Other _____
- f. I prefer not to answer

4. What is the highest degree you have earned?

- a. High School Diploma
- b. Associate's Degree
- c. Bachelor's Degree
- d. Master's Degree
- e. Doctorate
- f. Other _____
- g. I prefer not to answer

5. What is your job title?

- a. PCA
- b. PCT
- c. RN, Clin 1
- d. RN, Clin 2
- e. RN, Clin 3
- f. RN, Clin 4
- g. Nurse Practitioner
- h. Physician, Resident
- i. Physician, Attending
- j. Other _____

6. How many years/months have you worked as a nurse (or in your current field)?

Years _____ Months _____

7. How many years/months have you worked at UVa?

Years _____ Months _____

8. How many years/months have you worked on 6 East?

Years _____ Months _____

Appendix F

Post-Study Survey

1. How many Journal Club meetings did you attend? ____ 2. If not all 4, what kept you from participating? If you did attend all 4 what encouraged you to attend?
3. Did you recommend any topics? Yes No 4. Were the topics covered important to your unit?
5. Would you be interested in continuing Journal Club meetings in the future? Yes No Maybe 6. What would make it more likely that you would participate in Journal Club in the future?
7. Did you read the articles prior to the meetings? Yes No Sometimes 8. How could the articles be more available in the future, or what would encourage you to read ahead?
9. What was the greatest benefit you gained from Journal Club participation?
10. What was the greatest deterrent to participating in Journal Club?
11. Do you have any other comments on Journal Club that you would like to share?

Appendix G

Approval Letter to Conduct Study

June 23, 2015

Ainsley Polson, RN, MSN
6 East Nurse Manager
University of Virginia Medical Center
Atk5f@hscmail.mcc.virginia.edu
434-760-0217

Jessica Schwinck has presented a proposal to conduct a capstone on 6 East. The title of the proposal is: Change in Beliefs about Evidence-Based Practice Due to Participation in a Unit-Based Journal Club. I have given permission to Jessica to complete her capstone on 6 East. I look forward to seeing the work and participation from Jessica and the unit's team members.

Sincerely,

Ainsley Polson, RN, MSN

Appendix H

Data Tables

Table H1

Pre-Survey Demographic Data

Characteristics	n (%)
Gender	
Female	9 (81.81)
Male	2 (18.18)
Age	
≤ 19	0
20 to 24	1 (9.09)
25 to 29	2 (18.18)
30 to 34	0
35 to 39	3 (27.27)
40 to 44	2 (18.18)
≥ 45	3 (27.27)
Race	
White or Caucasian	9 (81.81)
Asian	1 (9.09)
Black or African American	1 (9.09)
Highest Education Level	
Diploma	1 (9.09)
Associates	4 (36.36)
Bachelors Degree	4 (36.36)
Masters	2 (18.18)
Doctors	0
Clinical Nurse Ladder Level	
Clin 1	3 (27.27)
Clin 2	6 (54.55)
Clin 3	2 (18.18)
Time as a Nurse	
< 1 year	3 (27.27)
1-2 years	0
2-3 years	2 (18.18)
3-5 years	1 (9.09)
> 5 years	5 (45.45)

Table H2

Post-Survey Questionnaire

Education Level	Associates	Bachelors	Masters	Total
Questions	n (%)	n (%)	n (%)	n (%)
How many Journal Club meetings did you attend?				
1	0	2(50)	1(50)	3 (33.33)
2	0	1(25)	0	1 (11.11)
3	2(66.67)	0	1(50)	3 (33.33)
4	1(33.33)	1(25)	0	2 (22.22)
Did you recommend any topics?				
Yes	2(66.67)	1(25)	1(50)	4 (44.44)
No	1(33.33)	3(75)	1(50)	5 (55.56)
Did you read the articles prior to the meetings?				
Yes	0	1(25)	1(50)	2 (22.22)
No	1(33.33)	2(50)	1(50)	4 (44.44)
Sometimes	2(66.67)	1(25)	0	3 (33.33)
Would you be interested in continuing Journal Club meetings in the future?				
Yes	1(33.33)	2(50)	2(100)	5 (55.56)
No	1(33.33)	0	0	1 (11.11)
Maybe	1(33.33)	2(50)	0	3 (33.33)

Table H3

Changes in Evidence Based Practice Belief Scale Score due to Participation in Journal Club Meetings

Variable	Pre Score			Post Score			Paired Differences							
	<i>M</i>	<i>SD</i>	Std. Error Mean	<i>M</i>	<i>SD</i>	Std. Error Mean	<i>M</i>	<i>SD</i>	Std. Error Mean	95% CI of Difference		<i>t</i>	df	Sig. (2-tailed)
Overall	60.78	6.51	2.17	67.56	5.03	1.68	6.78	5.70	1.90	2.40	11.16	3.57	8	**0.007
Education														
Associates	57.00	3.61	2.082	67.67	1.16	0.67	10.67	2.89	1.67	3.50	17.84	6.40	2	*0.024
Bachelors	63.50	8.35	4.17	70.00	6.33	3.16	6.50	6.56	3.28	-3.93	16.93	1.98	3	0.142
Masters	61.00	5.66	4.00	62.50	2.12	1.50	1.50	3.54	2.50	-30.27	33.27	0.60	1	0.656
Time as RN														
< 1 year	59.33	6.03	3.48	66.67	2.52	1.45	7.33	7.64	4.41	-11.64	26.31	1.66	2	0.238
2 - 5 years	61.50	3.54	2.50	69.00	9.90	7.00	7.50	6.36	4.50	-49.68	64.68	1.667	1	0.344
> 5 years	61.50	9.04	4.52	67.50	5.32	2.66	6.00	5.72	2.86	-3.10	15.10	2.10	3	0.127
Meetings														
1 or 2	61.00	4.24	2.12	67.50	6.19	3.10	6.50	6.56	3.28	-3.93	16.93	1.998	3	0.142
3 or 4	60.60	8.44	3.78	67.60	4.67	2.09	7.00	5.70	2.55	-0.08	14.08	2.75	4	^0.052

Note. ** $p < 0.01$, * $p < 0.05$, ^ $p = 0.05$

Table H4

Mean, Median, and Mode from Evidence-Based Practice Belief Scale Survey Before and After Participation in Journal Club Meetings

Question #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre																
Mean (SD)	4.67 (0.50)	3.56 (1.1)	4.22 (0.83)	4.33 (0.71)	4.56 (0.53)	3.78 (0.97)	3.56 (0.53)	3.78 (0.97)	4.44 (0.53)	3.33 (1.0)	2.33 (0.87)	3.56 (0.73)	2.89 (0.93)	3.33 (1.0)	3.44 (0.73)	3.44 (0.73)
Median	5.00	4.00	4.00	4.00	5.00	4.00	4.00	4.00	4.00	3.00	2.00	3.00	3.00	4.00	4.00	4.00
Mode	5	4	5	*4 & 5	5	4	4	4	4	*3 & 4	2	3	2	4	4	4
Post																
Mean (SD)	4.78 (0.44)	4.33 (0.87)	4.44 (0.53)	4.67 (0.50)	4.89 (0.33)	4.44 (0.73)	4.33 (0.50)	3.89 (0.78)	4.78 (0.44)	4.33 (0.71)	2.56 (1.1)	4.33 (0.71)	2.56 (1.1)	4.33 (0.71)	4.44 (0.53)	4.44 (0.53)
Median	5.00	5.00	4.00	5.00	5.00	5.00	4.00	4.00	5.00	4.00	2.00	4.00	3.00	4.00	4.00	4.00
Mode	5	5	4	5	5	5	4	4	5	*4 & 5	2	*4 & 5	3	4	4	4

Note. * = Multiple modes exist. Scales: 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree. Questions are available in Appendix C.

Appendix I

Institutional Review Board for Social & Behavioral Sciences Proposal and Consent Forms

A. Investigator Agreement**BY SIGNING THIS DOCUMENT, THE INVESTIGATOR AGREES:**

1. That **no participants will be recruited** or data accessed under the protocol **until** the investigator has received the **final approval or exemption letter** signed by the Chair of the Institutional Review Board for the Social and Behavioral Sciences (IRB-SBS) or designee.
2. That **no participants will be recruited** or entered under the protocol **until** all researchers for the project including the Faculty Advisor have completed their **human investigation educational requirement** (CITI training is required every 3 years for UVA researchers).
3. That any **modifications of the protocol or consent form** will not be implemented without prior **written approval** from the IRB-SBS Chair or designee except when necessary to eliminate immediate hazards to the participants.
4. That any **deviation from the protocol and/or consent form** that are serious, unexpected and related to the study or a **death** occurring during the study **will be reported promptly to the SBS Review Board** in writing.
5. That all protocol forms for **continuations of this protocol** will be **completed** and returned **within the time limit stated** on the renewal notification letter.
6. That all **participants will be recruited and consented as stated in the protocol approved or exempted** by the IRB-SBS board. If written consent is required, all participants will be consented by signing a copy of the consent form that has a non-expired IRB approval stamp.
7. That the IRB-SBS office will be notified within **30 days** of a **change in the Principal Investigator** for the study.
8. That the IRB-SBS office will be notified when **the active study is complete**.

Jessica Schwinck

22 July 2015

Principal Investigator (print)

Date

Journal Club Influence on EBP Belief

Protocol Title

Protocol Number (SBS office only)

 Principal Investigator's Signature
FOR STUDENT AND STAFF PROPOSALS ONLY**BY SIGNING THIS DOCUMENT, THE FACULTY ADVISOR HAS READ THE PROPOSAL FOR RESEARCH AND AGREES:**

1. To **assume overall responsibility** for the conduct of this research and investigator.
2. To **work with the investigator**, and with the SBS Review Board, as needed, in **maintaining compliance with this agreement**.
3. That the **Principal Investigator is qualified to perform this study**.

Beth Quatrara

22 July 2015

Faculty Advisor (print)

Date

 Faculty Advisor's Signature

The SBS Review Board reserves the right to terminate this study at any time if, in its opinion, (1) the risks of further experimentation are prohibitive, or (2) the above agreement is breached.

Protocol Form

B. Protocol Information

IRB-SBS Protocol Number (assigned by SBS office, leave blank):

IRB-SBS Grant Approval number: (If you received a Grant Approval prior to submitting a protocol, please include the number issued by our office. If you did not submit a Grant Approval Form, please leave this line blank.)

Submission Type (delete all those that don't apply):

New Protocol

Protocol Title:

Journal Club Influence on EBP Belief

Principal Investigator:

Jessica Schwinck

Professional Title:

MSN, RN, ACCNS-AG, CEN

School (Curry, Medical, Arts & Sciences, etc):

School of Nursing

Department (CISE, Family Medicine, Psychology, etc):

Acute Care

Campus Box number:

Mailing Address (only if campus box number is not available):

118 University Gardens Apt 1
Charlottesville, VA 22903

Telephone:

253-212-6961

UVA e mail address (no aliases, please):
Your computing ID is used for tracking your IRB CITI training.

jls3ad@virginia.edu

Preferred e-mail address for correspondence (if applicable):

jls3ad@virginia.edu

You are (delete all those that don't apply):

Graduate Student

This research is for (delete all those that don't apply):

Doctoral Scholarly Project

Primary contact for the protocol (if other than the principal investigator):

Contact's Email:

Contact's Phone:

Faculty Advisor:

Beth Quatrara

School (Curry, Medical, Arts & Sciences, etc):

Nursing

Department (CISE, Family Medicine, Psychology, etc):

Campus Box number:

800135

Telephone:

434-924-5392

UVA e mail address (no aliases, please):

Your computing ID is used for tracking on-line human subjects training.

bad3e

Other Researchers*:

Please list all other researchers in this study that are associated with UVA.*

Please provide the following information for each researcher: Name, UVA email address (no aliases, please.)

Please list all other researchers not associated with UVA.* Please provide the following information for each researcher: Name, Institution, Phone Number, Mailing Address, Email Address.

Funding Source: If research is funded, please provide the following:

Name of the funding source (NIH, NFS, Robert Wood Johnson Foundation, etc)

Type of funding source (delete all that don't apply):

Describe the funding source (optional unless you selected "sub contract" above)

funding period (month/year):

grant number:

Paying Participants: If you are paying

I am paying participants using State or UVA funds

☐

I am not paying participants or I am not

☒

participants using State or UVa funds (including grants), you are required to complete the UVa or State Funds Study Payment Procedures Form. (Please describe your payment process in question 3-b in the next section.) Please mark an "x" in the appropriate box (to the right):

(including grants) and will include the UVa or State Funds Study Payment Procedures Form.

using State or UVa funds (including grants).

Anticipated start date for collecting and analyzing data:

8/24/15

Anticipated completion date for collecting and analyzing data:

5/22/16

* Please only list researchers that are working directly with human subjects and/or their data. All researchers listed on the protocol must complete the IRB-SBS Training or provide proof of completing IRB training at their institution. If you have any questions about whether a researcher should be listed on the protocol or if a researcher has completed training, please contact our office (irbsbshelp@virginia.edu). Proof of training can be submitted to our office via fax (434-924-1992), by mail (PO Box 800392 Charlottesville, VA 22908-0392) or by email (irbsbs@virginia.edu).

C. Description of the Research Study

1. **Study Overview:** Give a brief overview of your project. Consider the following when framing your response:

- What is your purpose in conducting this research? What makes the project interesting and worth doing?
- Include information about the study's logistics (where and when it will be conducted, what instruments you will use, etc). What will you be asking participants to do, and what do you hope to learn from these activities?
- If your study has more than one phase, please clearly map out the different phases.
- If your study is a multi-site study, please describe.

Response 1: (enter response below this header)

The purpose of the study is to determine the change in beliefs about Evidence-Based Practice through participation in a unit-based journal club. Participants in the study will be surveyed using a validated and reliable tool regarding their beliefs in Evidence Based Practice before and after participation in 1 to 4 monthly Journal Club meetings.

At the beginning of the first journal club meeting the participants will be asked to complete the survey tool including demographics and the EBP Beliefs Scale, this will ensure pre-data is collected before any interventions are conducted.

The intervention, of participation in journal club meetings, will occur over four months before the post survey is conducted. The journal club meetings will be held on the ortho/trauma unit, at a time to be determined by staff input, twice monthly for one hour.

During the meetings a journal article will be reviewed using the Critical Appraisal Skills Programme (CASP; <http://www.casp-uk.net/>). Following the review the participants will be encouraged to discuss how the information in the article can influence their own practice and patient care.

Following the final meeting the participants will again be surveyed using the same EBP beliefs scale tool. In addition the survey will ask how many journal club meetings the respondent participated. If any participant that has participated in at least one meeting is not present at the final journal club meeting attempts will be made to reach the individual to provide an opportunity to fill out a survey outside the journal club meeting through email or in-person contact.

The knowledge gained from this study will contribute to the overall understanding of influence of journal club participation on EBP beliefs in both nurses and other clinical staff. Additionally, demonstration of increased beliefs in EBP due to participation in journal club will provide evidence to encourage others within the unit to participate in the meetings and will justify the continuation of the meetings after the completion of this study. It will also provide data that can be used to inspire creation of other regularly scheduled in-person journal club meetings throughout the hospital.

2. **Participants:** Please describe as best you can the population(s) you plan to work with. Please describe them in the terms that are most pertinent to your project. We need to understand how working with them will further your research objectives and what steps need to be taken in order to minimize risk to them. Please respond to questions a-e in this section.
- a. Please fill in the following blanks below. If you are working with more than one population,

please provide information for each group.

Response 2-a: (enter response below this header)

Age: Adults 18+
Gender: Male and Female
Race: Varied
Estimated number of participants: 25-40

- b. Describe how participants will be identified and selected to participate in the study. Are there specific populations that you will be targeting and if so, why? Are there potential participants that you will exclude from the study and if so, why?

Response 2-b: (enter response below this header)

Participants will be recruited from the staff of the Acute Care Ortho/Trauma unit at UVA Health System. All clinical care providers will be welcome to participate in the study including PCA/PCT, RN, & Physician Residents.

- c. Is the population and/or individual participant "[risk-sensitive](#)"? (You will have an opportunity to discuss the risks in more detail in the "Risks" section.) Is the population and/or individual participant "[vulnerable](#)"? (This issue relates to the participant's capacity consent; you will have an opportunity to discuss your consent procedures in more detail in the "Consents" section.)

Response 2-c: (enter response below this header)

No

- d. Will you deceive and/or withhold information from the participants about the study? If so, please justify why deception and/or withholding information from the participants is necessary and describe the deception. Using deception requires specific consent forms and processes; please describe this process in the Consent section under Response 3-a and 3-b.

Response 2-d: (enter response below this header)

No

- e. What special experience or knowledge do you have that will allow you to work productively and respectfully with your participants?

Response 2-e: (enter response below this header)

The evidence on journal clubs states that a clinical nurse specialist is an ideal selection for leading a journal club meeting. I am an Acute Care Clinical Nurse Specialist and I have been working with the staff on the unit for the past year during my clinical experiences. Additionally I have been part of an ongoing research study investigating the use of Google Glass devices for teaching as an investigator. As a graduate student I have had multiple classes focused on research and evidence-based practice including: GNUR 5410-Theory and Evidence Based Practice, GNUR 8620-concepts and Methods in Health Services Research, and GNUR 8660-Evidence-Based Practice. The faculty advisor is the Director of Nursing Research Program where she conducts novel research and mentors nurses in clinical research.

3. **Consent:** [Consent](#) is an on-going process that starts when you first inform your participant about the study through your recruitment/advertising efforts and ends when the participant's data are no longer needed. The federal regulations require a [formal consent process](#) takes place where you provide participants with specific

information about the study (usually provided in the consent form, see General Consent Template) and the participants are required to sign the form. Not [every study will fit this](#) mold and there are some [alternative methods](#) for conducting the formal consent procedure. In general, the Board needs to understand how participants will be recruited and consented to participate in the study. Please note that if your study qualifies for [exemption](#), you will not be required to follow the federal regulations for consent, but the Board may require that you provide information about the study to the participant. Please respond to questions a-d in this section.

- a. How will you [approach/recruit](#) participants to participate in your research? Please provide all materials used to contact participants in this study. These materials could include letters, emails, flyers, advertisements, etc. If you will contact participants verbally, please provide a script that outlines what you will say to participants.

Response 3-a: (enter response below this header)

Flyers will be posted in high staff traffic areas.
Announcements will be made by the primary investigator, the nurse manager, or the shift manager during 5 minute morning huddle meetings.
Additionally, an email will be sent out to the staff.
Documents attached.

- b. What is your [consent process](#)? Who will present the consent information and how will it be presented? How will you [document consent](#)? Are your participants able to sign a form, and if not, how will you document consent? Will you use more than one form (if you use more than one version of the consent form, [each form needs to have a unique title in order for our staff to keep track of the different forms](#))? When and where will participants receive the consent form? Who will give them the consent form? Will you pay participants?

Response 3-b: (enter response below this header)

Participants will complete an informed consent agreement prior to filling out the initial pre-survey. The informed consent process will be reviewed with the participants, as a group, prior to requesting signature. Consent forms will be collected and maintained in a folder in the nurse manager's office until the study is complete. The folder will be maintained in a file cabinet in the office where the door is closed and locked unless the nurse manager is present.
Participants do not have to participate in the study to be part of the journal club intervention.
Participants will not be paid.

- c. Are any of your participants [unable to consent](#) (i.e. vulnerable population)? These populations include (but are not limited to): minors (participants under the legal age of consent), prisoners, and participants with diminished mental capacity. These participants generally need a parent (or surrogate) consent form and a participant assent form (prisoners being the likely exception unless they are minors too).

Response 3-c: (enter response below this header)

No

- d. What is your [relationship](#) to your participants? Do you know them personally or hold any position of authority over them? Do any of the researchers (including the faculty advisor) have positions of authority over the participants, such as grading authority, professional authority, etc.? Are there any relevant financial relationships?

Response 3-d: (enter response below this header)

I have worked with the participants over the past year; however, I do not hold any authority over them. No

researchers, including the faculty advisor, have any authority over the participants. There are no relevant financial relationships.

4. **Materials/Data collected:** For most SBS studies, the risk to participants often lies in the information that is collected from them. Thus the manner in which the data are collected, how they are stored, and how the data are reported in your research is an important part of determining the risk to participants. When you develop your procedures, consider minimizing or eliminating the collection of [identifying information](#) where possible and provide justification as to why it needs to be collected. Please respond to questions a-d in this section.

- a. Are any of the [data already collected](#)? (If you are only using archival data, please use the Archival Data protocol form instead of this form.) Are the data [publicly available](#) or part of a [private collection](#)? Please describe the data set(s) and provide a list of data fields you will use (when applicable). What will you do to protect the [confidentiality](#) of the pre-existing data?

Response 4-a: (enter response below this header)

No

- b. What will you do to protect the [privacy](#) of your participants? Describe the [process for collecting data](#) from your participants. What will you do to protect the [confidentiality](#) of your participants? Describe the kinds of information you will gather and the material forms it will take. Describe the level to which the participant's identity will be known, if that information will be collected (and why), and how the [identifying information](#) will be linked with the participant's data. If you don't intend to collect identifying information, describe your process for keeping the data anonymous.

Response 4-b: (enter response below this header)

Participants will fill out the surveys confidentially. Each participant will be assigned a random number to identify their pre- and post-survey for comparison. A name/number document will be kept on a secured spreadsheet maintained on the password protected J:\\ drive of the UVa Server, this document will be deleted after completion of the study.

Demographic data collected may make it possible to deduce the identity of the participants; however there will be no attempt to do so and data will be reported in a way to not identify anyone.

- c. Will you use audio recordings, photographs, video recordings or other similar [data recording devices](#)? Please justify why it is necessary to use these devices, how you will use them, and what you will do with the data after they are collected.

Response 4-c: (enter response below this header)

No

- d. How will your materials be [stored](#)? Discuss both how you plan to store it while you are collecting and actively analyzing it, and your [long-term plan](#) for maintaining it when the active research phase is finished. How will your data be reported in your study? Will you report the results in aggregate or will individual data be discussed?

Response 4-d: (enter response below this header)

All electronic data will be maintained on the password protected UVa J:\\ drive. Paperwork will be electronically scanned into the J:\\ drive, then destroyed. Long term, the de-identified data will be transferred to, and maintained on, a password protected USB drive. When data is no longer required, the drive will be erased using a commercial software application to remove all data from the storage device. Data will be reported in aggregate. Depending on study outcomes, some individual data may be discussed

but will be de-identified.

Psychometric data from the study will be provided to the Advancing Research and Clinical practice through close Collaboration (ARCC, llc), as required for use of the tool. Prior to transferring data all demographic information will be removed.

5. **Risks:** Almost any intervention into other people's lives carries with it the potential to cause them social, psychological, physical, or legal harm. However, not every interaction will put a participant at risk beyond what is considered minimal. Please describe to the Board the potential risks and the probability of harm to the participants in your study. In this section, consider the following when framing your response:
- Describe the risks to the participants in your study. Does your study include "risk-sensitive" participants (as identified in the Participants section)? What is the probability that harm could occur?
 - Describe what you will do to minimize those risks. Describe what you will do if a harmful situation occurs.
 - Would a loss of confidentiality of any of your materials put participants at risk? If so, how will you prevent this from happening?

Response 5: (enter response below this header)

There is minimal risk in this study. The biggest risk is loss of confidentiality. Loss of confidentiality, in this study, will not put the participants at risk as the data collected is not sensitive. The risk will be managed by maintaining the documents on a password protected drive. A spreadsheet linking name and study identification number will be maintained in an electronic folder separate from study data and will be destroyed at the end of the study.

6. **Benefits:** Benefits help to outweigh the risks to the participants, though not every study will have direct benefits to the participants. In this section, consider the following when framing your response:
- Will there be any benefits to the participants in your study? If so, what are they?
 - What is the general importance of the knowledge you expect to gain?

Response 6: (enter response below this header)

There is no benefit to individuals participating in the study. The knowledge gained from this study will contribute to the overall understanding of influence of journal club participation on EBP beliefs in both nurses and other clinical staff. Additionally, demonstration of increased beliefs in EBP due to participation in journal club will provide evidence to encourage others within the unit to participate in the meetings and will justify the continuation of the meetings after the completion of this study. It will also provide data that can be used to inspire creation of other regularly scheduled in-person journal club meetings throughout the hospital.

Project Title: Change in Beliefs about EBP Through Participation in a Unit-Based Journal Club

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 the study is to determine the change in beliefs about Evidence-Based Practice through participation in a unit-based journal club.

What you will do in the study: You will fill out a demographic and 16 question beliefs scale prior to and following four months of journal club (no matter the number of meetings attended). You will attend between one and four meetings of a one hour journal club reviewing and discussing the current evidence for nursing practice. Pre- and Post-surveys will be filled out during the meeting time unless you do not attend the final meeting, then data will be collected through email or face-to-face.

Time required: The study will require 1-4 hours of your time depending on the number of meetings attended. Each meeting will be one hour.

Risks: There is a risk of loss of confidentiality, however this will be managed through use of a random number assignment to you and you will not use your name on any material.

Benefits: Benefits include participation in a unit-based journal club and an update to your knowledge of best practice for your patients. The study may help us understand how participation in a journal club contributes to beliefs about evidence-based practice.

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. Because of the nature of the data, it may be possible to deduce your identity; however, there will be no attempt to do so and your data will be reported in a way that will not identify you.

Voluntary participation: Your participation in the study is completely voluntary.

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 choose to withdraw from the study, either during or after the study is complete, notify the primary investigator and your data will be withdrawn from the results.

If you want to withdraw from the study, notify the investigator and do not complete the surveys. There is no penalty for withdrawing.

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

Revision date: 11/01/11

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Protocol #		
Approved	from:	to:
SBS Staff		

Project Title: Change in Beliefs about EBP Through Participation in a Unit-Based Journal Club

If you have questions about the study, contact:

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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
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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.

Revision date: 11/01/11

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Protocol #		
Approved	from: _____	to: _____
SBS Staff		

Appendix J

Journal Articles Reviewed with First Page of Each

Articles Reviewed During Journal Club Meetings

Meeting	Topic	Article
1	Caring Behaviors	Nantz, S., Hines, A. (2015). Trauma patients' family members' perceptions of nurses' caring behaviors. <i>Journal of Trauma Nursing</i> , 22(5), 249-254.
2	Burnout, Compassion Fatigue	Hinderer, K., VonRueden, K., Friedman, E., McQuillan, K., Gilmore, R., Kramer, B., & Murray, M. (2014). Burnout, compassion fatigue, compassion satisfaction, and secondary traumatic stress in trauma nurses. <i>Journal of Trauma Nursing</i> , 21(4), 160-169.
3	Horizontal Violence	Purpora, C. & Blegen, M. (2015). Job satisfaction and horizontal violence in hospital staff registered nurses: the mediating role of peer relationships. <i>Journal of Clinical Nursing</i> , 24, 2286-2294.
4	Trauma as a Factor for Stroke	Wojcik, J., Benns, M., Franklin, G., Harbrecht, B., Broughton-Miller, K., Frisbie, M.,...Bozeman, M. (2013). Traumatic injury may be a predisposing factor for cerebrovascular accident. <i>Journal of Trauma Nursing</i> , 20(3), 139-143.

RESEARCH

Trauma Patients' Family Members' Perceptions of Nurses' Caring Behaviors

Sarah Nantz, MSN, RN, NEA-BC ■ Annette Hines, PhD, RN, CNE

ABSTRACT

A mixed methods study was conducted to identify trauma patients' family members' perceptions of nurses' caring behaviors on a trauma step-down unit at a level I trauma center. Family members completed Caring Behaviors Inventory-Short Form 24 and a qualitative section. Quantitative data were analyzed using descriptive statistics. On a scale of 1 to 6, the mean score for individual items was 5.2 (median = 5.3). Participants considered the nurses' behaviors to be indicative of caring in each of the 4 areas measured—assurance, knowledge/skills, respectfulness, and connectedness. Four themes were identified—technical, nonverbal, personal connections, and addressing comfort.

Key Words

Caring, Caring behaviors Inventory, Caring science, Family perceptions, Trauma

In nursing practice today, the bedside nurse is busy with the demands of computerized charting, documentation legalities, and task lists, and the caring nurse-patient relationship is easily lost to seemingly more pressing responsibilities.¹ In particular, the high-pressure nursing environment of a trauma step-down unit places much importance on technical and knowledge-based skills.² However, it is the obligation of the nurse to provide holistic care and meet both the patient's physiological and emotional needs.²

Being hospitalized following a traumatic event is unanticipated by patients and family members and terribly frightening.² Nurses have unique responsibilities to comfort and care for the patients as well as the families during this cataclysmic experience. There is a lack of research on caring for patients on a trauma step-down unit and nursing literature that addresses the family's perspective on caring for a trauma patient is minimal.³ However, on the basis of a

personal traumatic experience, Engel⁴ stressed the importance of the patient's family who serve in many supportive roles for the patient and witness all components of care, from caring understanding to heartless disregard.

Likeminded, Keenan and Joseph,⁵ to better understand the needs of family members, conducted a qualitative study at 2 different points with 25 family members of patients who had traumatic brain injuries. The family members were interviewed twice, once at the time of the patient's transfer from the intensive care unit to a floor unit, and once at the time of discharge from the acute care facility. The researchers found that nurses played a vital role in aiding families and concluded that nurses should recognize the value of their efforts and take appropriate steps to become more involved in the psychological health of the family as well as the patient.⁵

Hayes et al³ also studied what family members of traumatically injured patients perceived as caring using a modified version of the Caring Behaviors Inventory. They found that families recognized positive caring behaviors directed to them by the nursing staff during the times they visited. Few studies, however, have combined qualitative and quantitative measures to determine how families view nurses' caring behaviors on a trauma step-down unit and which behaviors are seen as caring versus uncaring.

The theoretical framework utilized in this research was the Watson Theory of Human Caring.⁶ Watson⁶ based her theory on *caritas* processes that focus on the caring relationship between the nurse and the patient. While caring for patients, nurses must also care for the needs of their families. The Watson theory can be applied to diverse nurse-patient settings so that nurses create healing environments for the patients and families and develop caring relationships while being sensitive to self and others. Caring moments, which lie at the heart of the Watson philosophy, require listening to the needs of patients and families and connecting with caring, human experiences, and the spiritual processes of humanity.⁶ The Watson processes of authentic listening to another's story and being sensitive to self and others inform the nurse's ability to view a patient in the context of family.⁶

PURPOSE

Given the highly stressful nature of a trauma event, relationships developed by nurses with patients and families

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The authors declare no conflicts of interest.

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DOI: 10.1097/JTN.0000000000000149

Burnout, Compassion Fatigue, Compassion Satisfaction, and Secondary Traumatic Stress in Trauma Nurses

Katherine A. Hinderer, PhD, RN, CCRN ■ Kathryn T. VonRueden, MS, RN, CNS-BC, FCCM ■
Erika Friedmann, PhD ■ Karen A. McQuillan, RN, MS, CNS-BS, CCRN, CNRN, FAAN ■
Rebecca Gilmore, RN ■ Betsy Kramer, RN, BS/BM ■ Mary Murray, RN, MS

ABSTRACT

The relationship of burnout (BO), compassion fatigue (CF), compassion satisfaction (CS), and secondary traumatic stress (STS) to personal/environmental characteristics, coping mechanisms, and exposure to traumatic events was explored in 128 trauma nurses. Of this sample, 35.9% had scores consistent with BO, 27.3% reported CF, 7% reported STS, and 78.9% had high CS scores. High BO and high CF scores predicted STS. Common characteristics correlating with BO, CF, and STS were negative coworker relationships, use of medicinals, and higher number of hours worked per shift. High CS correlated with greater strength of supports, higher participation in exercise, use of meditation, and positive coworker relationships. Caring for trauma patients may lead to BO, CF, and STS; identifying predictors of these can inform the development of interventions to mitigate or minimize BO, CF, and STS in trauma nurses.

Key Words

Burnout, Compassion fatigue, Compassion satisfaction, Secondary traumatic stress, Trauma nursing

Repeated exposure to the traumatic injuries of patients in a high-stress environment increases trauma nurses' risk for development of burnout (BO), compassion fatigue (CF), and secondary traumatic stress (STS). Compassion satisfaction (CS) is a positive outcome of caring for trauma patients. Little

is known about the relationship of caring for the trauma patients and BO, CF, CS, and STS in the trauma nursing population. Trauma nursing encompasses the care of a trauma patient through the entire continuum of care. This can include nurses working in specialty trauma departments that range from the emergency department (ED) through critical care and rehabilitation.¹

BURNOUT

Burnout encompasses emotional exhaustion, patient depersonalization, negative attitudes toward patients, and diminished feelings of personal and work accomplishments.^{2,3} The nature of nursing work and exposure to the illness of others are related to the development of BO.^{4,6} One study found that BO was contagious among nurses.⁷ Studies have linked BO to the stress of the nursing work environment, workload, patient acuity, coping mechanisms, and years of nursing experience.^{8,9} Younger, less experienced nurses, especially those within 2 years of graduation, were at an increased risk of developing BO.¹⁰ A recent study of emergency, intensive care, nephrology, and oncology nurses revealed that approximately 82% of nurses surveyed exhibited moderate to high levels of BO.¹¹ In institutions where nurse BO was high, patient satisfaction was low.⁸ In today's health care environment, this is highly relevant to nursing practice and sustainability. Patient satisfaction, as assessed by the Hospital Consumer Assessment of Healthcare Providers and Systems (HCAHPS), has financial implications for many hospitals receiving reimbursement from the Centers for Medicare and Medicaid Services (CMS).¹²

Secondary Traumatic Stress and Compassion Fatigue

Nurses who provide care to trauma patients may develop STS.¹³ Secondary traumatic stress is the development of posttraumatic stress disorder (PTSD) in health care workers and includes behaviors and emotions experienced as a result of exposure to another's trauma. Those experiencing STS may exhibit symptoms such as irritability, inability to concentrate, anger, intrusive or recurrent disturbing thoughts, and sleep disturbances.^{9,14} Nurses

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The authors declare no conflicts of interest.

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DOI: 10.1097/JTN.0000000000000055

ORIGINAL ARTICLE

Job satisfaction and horizontal violence in hospital staff registered nurses: the mediating role of peer relationships

Christina Purpora and Mary A Blegen

Aims and objectives. To describe the association between horizontal violence and job satisfaction in hospital staff registered nurses and the degree to which peer relationships mediates the relationship. Additionally, the association between nurse and work characteristics and job satisfaction were determined.

Background. Horizontal violence is a major predictor of nurses' job satisfaction. Yet, not enough is known about the relationship between these variables. Job satisfaction is an important variable to study because it is a predictor of patient care quality and safety internationally. Peer relationships, a job satisfier for nurses, was identified as a potential mediator in the association between horizontal violence and job satisfaction.

Design. Cross-sectional mediational model testing.

Methods. An anonymous four-part survey of a random sample of 175 hospital staff registered nurses working in California provided the data. Data about horizontal violence, peer relationships, job satisfaction, and nurse and work characteristics were collected between March–August 2010.

Results. A statistically significant negative relationship was found between horizontal violence and peer relationships, job satisfaction and a statistically significant positive relationship was found between peer relationships and job satisfaction. Peer relationships mediated the association between horizontal violence and job satisfaction. Job satisfaction was reported as higher by nurses who worked in teaching hospitals. There were no statistically significant differences in job satisfaction based on gender, ethnicity, basic registered nurse education, highest degree held, size of hospital or clinical area.

Conclusions. The results suggest that peer relationships can attenuate the negative relationship between horizontal violence and job satisfaction. This adds to the extant literature on the relationship between horizontal violence and job satisfaction.

Relevance to clinical practice. The findings highlight peer relationships as an important factor when considering effective interventions that foster hospital staff registered nurses' job satisfaction in the presence of horizontal violence.

Key words: horizontal violence, hospital staff registered nurses, job satisfaction, peer relationships

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What does this paper contribute to the wider global clinical community?

- It indicates that hospital staff registered nurses' (RNs) peer relationships play a role in the association between horizontal violence and job satisfaction.
- It highlights peer relationships as an important factor when considering effective interventions that foster hospital staff registered nurses' job satisfaction in the presence of horizontal violence.

RESEARCH

Traumatic Injury May Be a Predisposing Factor for Cerebrovascular Accident

Jodi B. Wojcik, APRN-C, MSN ■ Matthew V. Bennis, MD ■ Glen A. Franklin, MD ■
Brian G. Harbrecht, MD ■ Kimberly D. Broughton-Miller, APRN-C, MSN ■
Michelle C. Frisbie, APRN-C, MSN ■ Jason W. Smith, MD ■ Karina M. Pentecost, APRN-BC, MSN ■
Matthew C. Bozeman, MD

ABSTRACT

The purpose of the study was to assess whether trauma may be an independent risk factor for stroke. Evidence has shown that trauma patients experience a hypercoagulable state postinjury, increasing the risk of thrombotic events. A case-controlled, retrospective analysis was performed on admitted trauma patients over a 2-year period. Results revealed that trauma patients are 1.6 times more likely to have a cerebrovascular accident (CVA) during their hospital admission, when compared with nontrauma patients with similar CVA risk factors. Several statistically significant differences between the groups were identified. On the basis of these results, trauma appears to be an independent, nonmodifiable risk factor for CVA.

Key Words

Cerebrovascular accident, Hypercoagulable state, Trauma

Stroke is the third leading cause of death in America today, with 795,000 strokes per year and 610,000 of these being new strokes. Each year, approximately 137,000 deaths occur and 266,000 persons suffer permanent disabilities due to new or recurrent stroke.¹ The average health care expenditure after stroke is \$140,000, with average initial hospitalization charges of \$33,600. Total cost to the American health care system ranges from 40 billion to 70 billion dollars per year.¹ These numbers indicate that stroke is a significant burden on our health care system. Despite advances in the treatment of acute stroke as well as rehabilitation of survivors of stroke, proper preventative strategies of the modifiable

risk factors provide the ultimate patient and public health benefit.

Patients suffering from acute traumatic injury have been shown to experience a prothrombotic state.^{2,4} It is well described in the literature that these patients are disproportionately at risk for venous thromboembolic events, such as deep venous thrombosis (DVT) and pulmonary embolism (PE).^{5,6,7} The timing and incidence of the hypercoagulable state is ill defined, especially when considering a large and diverse group of patients, such as the trauma population. The prothrombotic state is only diagnosed after an event such as a DVT or a PE has occurred. Emerging literature focuses on better identifying at-risk patients, as well as screening and treatment of these patients. What role the prothrombotic state plays in causing acute cerebrovascular accidents (CVAs) in the trauma population is poorly defined. Well-described risk factors for stroke in the general medical population exist; these modifiable risk factors include hypertension (HTN), diabetes mellitus, atrial fibrillation (Afib), tobacco use, cerebrovascular disease, dyslipidemia, physical activity, and obesity. Nonmodifiable risk factors include age, race/ethnicity, and predisposing genetic factors. Other, less well-described risk factors for stroke also include illness, infection, and inflammatory states.^{1,8}

Stroke-specific risk factors for traumatic injury include cerebrovascular injury, maxillofacial injuries, cervical spinal injuries, and traumatic brain injury.^{9,15} Whether traumatic injury is in itself a risk factor for stroke and whether that risk is modifiable through therapeutic methods after trauma are unknown. This study was designed to evaluate whether trauma is, within itself, an independent risk factor for stroke.

METHODS

A case-controlled, retrospective analysis of all trauma admissions from 2008 to 2010 was performed using the University of Louisville Hospital's trauma registry. A total of 7633 patients were evaluated, with 64 patients having suffered a CVA. These patients were identified, using various mechanisms. A combination of initial and subsequently changing neurologic examinations, brain

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The authors declare no conflicts of interest.

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Appendix K

Author Guidelines for Submission to *Clinical Nurse Specialist*

Clinical Nurse Specialist™ **Online Submission and Review System**

Purpose

The purpose of **Clinical Nurse Specialist** is to disseminate outcomes of clinical nurse specialist practice, to foster continued development of the clinical nurse specialist role, and to highlight clinical nurse specialist contributions to advancing nursing practice and health policy globally.

The objectives are to:

1. Disseminate knowledge about clinical nurse specialist competencies and the education and regulation of practice;
2. Communicate outcomes of clinical nurse specialist practice on the quality, safety, and cost of nursing and health services across the continuum of care;
3. Promote evidence-based practice and innovation in the transformation of nursing and health policy for the betterment of the public welfare, and;
4. Foster intra-professional and interdisciplinary dialogue addressing nursing and health services for specialty population in diverse care settings and cultures.

The Journal welcomes manuscripts on topics related to clinical nurse specialist practice and outcomes, policy analysis, leadership, civic engagement, and the education and regulation of clinical nurse specialists. Manuscripts may be original research (descriptive, quasi-experimental and experimental), literature reviews, reports of quality improvement projects and evidence-based practice programs. All areas of specialty practice are welcome.

Research reports should be clear and concise and include a statement of the problem and purpose, theoretical framework, design, methods and procedures, analysis of data, findings, conclusions and implications for research and advanced nursing practice, especially clinical nurse specialist practice. Evidence-based practice change projects should include a statement of the problem and purpose/goals of the project, background, project design and implementation procedures, outcome evaluation and implications for practice. Quality improvement studies should include detailed descriptions of the innovation or intervention and outcome data. International manuscripts demonstrating clinical nurse specialist practice and outcomes outside the United States and in varying cultural contexts are invited. International manuscripts should provide adequate contextual information about advanced practice nursing/clinical nurse specialist practice in the country of origin. Clinical research studies must identify the implications for advanced nursing practice. Manuscripts must be submitted in English.

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- Consist with the purpose of the journal;
- Represent an original idea;
- Appropriate to the level and interests of clinical nurse specialists;
- Organized, logically developed, complete, clear and grammatically correct;
- Tables, figures and illustrations are easy to follow, clearly designated, relevant and adequately captioned, and;
- Implications for clinical nurse specialist practice, education, regulation and/or health policy are identified.

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Changes in Beliefs about EBP from a
Clinical Nurse Specialist Led Journal Club

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Abstract

Background: Providing care in the hospital has become more complex and specialized. In order to keep up with the demand of ever increasing knowledge about evidence based practice, patient care providers are encouraged to read, understand, and implement the current literature.

Participation in a journal club is one strategy to update knowledge of current evidence.

Purpose: The purpose of this study was to test the following hypothesis: Participation in a unit-based journal club will improve perspectives about evidence-based practice as evidenced by an increase in scores on the EBP Belief Scale.

Design: A quasi-experimental study was conducted with pre-post comparison using a survey of EBP beliefs.

Methods: Conducted on an ortho/trauma acute care unit of an academic medical center in the South Eastern United States, the study included a pre-survey, 4 months of in person journal club meetings, and a post-survey to evaluate changes. Nine participants completed the pre and post survey.

Results: A statistically significant improvement was found between pre and post scores ($t=3.57$, $df=8$, $p=0.0007$) on the EBP Belief Scale following participation in this monthly journal club.

Conclusions: Participation in a monthly journal club significantly impacts nurse's beliefs in evidence based practice. Instituting journal club meetings on a unit can increase nurse's beliefs in evidence based practice and therefore may improve care for patients.

Key Words: Journal Club, Evidence-based practice, Research, Acute Care

Changes in Beliefs about EBP from a Clinical Nurse Specialist Led Journal Club

Introduction

Medicine and nursing are a constantly changing area and the Institute of Medicine recognizes that “care within the hospital...has become more complex.”^{1(p6)} Additionally, “...the nursing profession must adopt a framework of continuous, lifelong learning...”^{1(p31)}. Nurses who graduated from nursing school 15, or even 5 years ago, may lack the current awareness of best practices for care and medication standards unless they continually update their knowledge. Even if they update their knowledge it is not well known whether the nurse will incorporate the evidence-based practices (EBP) into their care.

One strategy nurses can use to update their knowledge is through membership in a professional nursing organization and reading the journals that often accompany the membership. However, only a small number of nurses belong to organizations; only 10% of nurses belong to the American Nurses Association (ANA), the largest professional organization for nurses,² this small number points to the low probability that nurses are receiving, and thus reading the journals, stocked with the most up to date clinical, research, and medical information. The greatest barriers reported for not joining nursing associations are cost and time.³ A common historical method to overcome the cost of joining a nursing organization, and encouraging reading and discussing the current literature from many organizations and periodicals, is through the creation and maintenance of a journal club. “A journal club can serve as a vehicle for the sharing and discussion of research articles. More than this, however, it can be used as a tool to develop knowledge and skills, such as critical thinking and evidence-based protocol development, which represent the overlap between research and expert clinical practice.”^{4(p130)}

Therefore, a belief in EBP is important when attempting to update nurse practice. This project aimed to answer the question: Does nurse participation in a unit-based journal club result in an improved attitude toward evidence-based practice as measured by the EBP Belief Scale?

Methods

The purpose of this quasi-experimental study was to test the following hypothesis: Participation in a CNS led journal club will improve perspectives about evidence-based practice as evidenced by an increase in scores on the EBP Belief Scale.

The *EBP Beliefs Scale*⁵ was used to assess staff and participants before and after journal club participation. The *EBP Beliefs Scale* is a sixteen item Likert-type scale assessing beliefs about the usefulness of Evidence Based Practice to improve patient care. According to Melnyk and Fineout-Overholt, “Scoring of the instrument consists of reverse scoring two negatively phrased items and then summing responses to the 16 items for a total score that ranges between 16 and 80.”^{6(p210)} This instrument has a Cronbach’s alpha ($>.85$) showing high reliability.

Permission was granted to use the *EBP Beliefs Scale* by Ellen Fineout-Overholt.

Pre-study demographic criteria collected included gender, age, race, job title, highest degree earned, number of years as a nurse, number of years at AMC, and number of years on unit. The post-study survey requested information on number of journal meetings attended; whether the participant recommended topics; interest in continuing journal club meetings; whether the participant read the articles prior to the meeting; and benefits and deterrents to participation in journal club meetings.

The study was conducted at a 584 bed academic medical center (AMC) in the southeastern United States that includes “...a hospital, level I trauma center, nationally recognized cancer and heart centers and primary and specialty clinics.”⁷ The patient care unit

selected for the study was the acute care orthopedic and trauma unit with a clinical staff of 40 RNs. The unit included 30 beds and a regular patient census of 24-26 patients with 35-50% turn-over each week day.

This study protocol was submitted to and approved by the Institutional Review Board for Social and Behavioral Sciences.

At the beginning of the first journal club meeting the participants were asked to complete the survey tool including demographics and the EBP Beliefs Scale,⁵ this ensured data was collected before any interventions were conducted.

The intervention, participation in journal club meetings, occurred over four months before the post survey was conducted. Following the final meeting the participants were again surveyed using the same EBP beliefs scale tool. In addition to the scale, data was collected to determine how many journal club meetings the respondent participated in. If participants, that attended at least one meeting, were not present at the final meeting an attempt to reach them through email and in-person contact was made.

Results

Data from the 16 question *EBP Beliefs Scale* was analyzed using IBM SPSS 22 statistical software. Descriptive statistics were computed on the demographic data. Pre and post scores of the participants, organized by variable were compared using a paired *t*-test to determine change in scores on the *EBP Beliefs Scale*.

Eleven staff members participated in at least a portion of any journal club and finished the pre-survey demographics. All participants in the journal club study were Registered Nurses with experience varying from two months to 42 years ($n=11$, $M=9.62$, $SD=12.65$, Table 1). Most of the participants were female (81%), outnumbering the male participants 9:2. The age of the

participants ranged from the early 20s to over 45 years, with the majority of the participants over 35 (Table 1). Education level of participants varied from Diploma through Masters with the majority of participants either Associate or Bachelors prepared, four of each, accounting for nearly 73% of the sample (Table 1). Clinician level varied from new grad (Clin1) to unit leaders (Clin 3) with the majority of the participants in the greater than 1 year of experience, but not yet unit leader level (Clin2; $n=6$, 54.5%). The sample demographics were representative of the study unit as a whole.

Two participants were lost to follow up and did not respond to requests to complete the post-survey. One individual attended the beginning of the first meeting, filling out the pre-survey, but patient needs precluded participation in a majority of that meeting or others. The other loss to follow up was an individual with less than 3 months experience and participation in 2 meetings.

Nine participants completed the post-survey and questionnaire for an 81.8% completion rate. Participants attended between one and four journal club meetings ($n=9$, $M=2$, $SD=1.24$; Table 2). Four of the nine respondents reported that they recommended a topic for the meeting (44.44%; Table 2). All but one of the participants responded that they would or maybe would be interested in continuing the Journal Club meetings (88.89%; Table 2). Articles were provided via email prior to the meetings, two of the nine (22.22%) respondents reported always reading prior to the meetings they attended, three (33.33%) reported they sometimes read, and four (44.44%) reported they did not read prior to the meetings (Table 2).

Evidence-Based Practice Beliefs Scale Data

Pre-survey results revealed scores that ranged between 53 and 75. Post-survey results ranged from 61 to 76. A paired t test was conducted and the results indicated that the mean of

the EBP Beliefs Scale score on the post-test ($M = 67.56$, $SD = 5.03$) was significantly higher than the mean of the EBP Beliefs Scale score on the pretest ($M=60.68$, $SD=6.51$; $t = 3.57$, $df = 8$, $p < 0.01$; 95% CI 2.40, 11.16; Table 3).

There was no significant change in pre/post scores based on time as an RN; however, nurses with an Associate's degree attended more meetings (total person hours = 10) and demonstrated greater improvement from pre to post journal club participation ($t=6.40$, $df=2$, $p<0.05$). Nurses with a Bachelor's degree spent 8 total person hours in journal club but demonstrated no statistically significant change in their pre/post scores ($t=1.98$, $df=3$, $p=0.142$). Nurses with a Master's degree spent 4 total person hours in journal club meetings and demonstrated no significant change in their pre/post score ($t=0.60$, $df=1$, $p=0.656$; Table 2, 3).

Those nurses who attended more meetings began with a lower pre-score compared to those who attended fewer (60.60:61) and increased their score higher than those who attended fewer meetings (67.6:67.5). The data revealed a trend for those who attended more meetings to demonstrate a greater increase in score ($t=2.75$, $df=4$, $p=0.052$; Table 3).

Participation in the CNS led journal club meetings was shown to have an overall improvement in mean scores and variation of answers (SD) on all but one area investigated by the EBP Beliefs Scale. Specific improvements included an increase in knowledge on the steps of EBP, a belief in critically appraising to the literature as an important step, an increased belief in ability to search the literature in a time efficient way, an increased belief that implementation of EBP will improve patient care, an increase in knowledge on how to measure the outcomes of clinical care, and an increased belief in the ability to access the best resources to implement EBP (Table 4).

Discussion

Although the sample size was small, the data revealed a statistically significant improvement in outcomes based on participation in journal club. Therefore, more exposure to discussions of evidence can lead to an increase in an individual's beliefs in EBP.

Nurses with an Associate's degree had a significant change in their pre/post scores indicating a greater improvement in beliefs in EBP. These nurses were also more likely to attend the meetings than others.

Participation in meetings, education level, and years of practice (Table 3) were all examined statistically, but were not found to be related to improvement in belief in EBP. Additional study with larger sample size will help to validate the findings.

The Journal Club meetings provided an opportunity for nurses to review the literature on areas of nursing that interested them or related to the needs of the unit. Four articles were reviewed by the Journal Club, topics covered included perceptions of Nurses' caring behaviors, burnout and compassion fatigue, horizontal violence, and predisposing factors for cerebrovascular accidents.⁽⁸⁻¹¹⁾ Each of these articles provided occasions to dialogue on subjects that directly influenced the study unit. The participants took the information from the meetings and debated how they could use the information in their own practice and to teach others on the unit. Two new grad nurses on the unit are already taking the information learned in the journal club to implement a study with interventions to reduce horizontal violence within the nursing staff. This is tangible evidence that the journal club has positively influenced the nursing staff and will continue to positively influence the care environment.

Data was not collected on the specific journal club meetings that participants attended in order to protect confidentiality, so the effect of each of the different discussions or articles was not quantified. In addition, it is important to note that the two articles that were selected based

on participant feedback were focused on interpersonal issues between Nurses. Most Journal Clubs focus on clinical topics and research; however, even with the selection of relationship topics there was still a notable change in pre- and post-scores on EBP beliefs. This finding may indicate that a dialogue on research as a whole and use of focused discussions using critical appraisal tools may have been more important than the topic of the article to promote confidence in EBP.

Use of a Critical Appraisal Tool (CAT) for the meetings was instrumental in facilitating the discussions. The best way to use the tools was found by assigning each person a question around the discussion table. Even if they had not read the article they were usually able to find the answer by skimming the article. Once they had shared a response the floor was opened for any other participants to share their interpretation of the question and for discussion on differing opinions. This organization allowed all journal club attendees an opportunity to become an active part of the conversation on EBP.

CNS led journal club meetings were held in the dayroom/breakroom of the study unit and often interrupted or supplemented by other staff members present in the room. Additionally the meeting attendees were often interrupted for patient care activities. Due to these interruptions the meetings were often started late, ended early, or paused in the middle, despite the disturbances there was still a significant increase in the EBP beliefs score. Further research is needed to determine the ideal length of time for a meeting when a meeting is held during a nurse's shift.

Eighty-nine percent of participants reported interest in continuing the journal club meetings indicating a desire for continuing educational growth. The author will work to facilitate a continuation of this Journal Club model while actively transitioning the leadership to a unit based leader.

Strengths and Limitations of Design

The strengths of this project are that an established, reliable measure of EBP beliefs was used for data collection. Since most of the literature on journal clubs has been anecdotal case studies, this quasi-experimental study will contribute to the available body of literature for evaluating the effect of Journal Club participation on EBP beliefs. In addition, this was a low cost project, requiring payment only for use of the instrument and snacks for the meetings.

Limitations include loss to follow up of two participants, 18.2% of the original sample did not complete the post-survey and may have skewed the results. Small sample size was also a limitation, the meetings were held twice weekly and meeting membership often was only 2-3 persons, this limit in participants may have narrowed the discussions. High clinical operational tempo was also a limitation for the actual process of the journal club. Patient needs and patient turn-over limited the time nurses and clinical staff could be away from the bedside resulting in late arrivals and interruptions of the meetings.

Future Study Opportunities

Although the results of the study showed an increase in EBP beliefs despite these interruptions, a future study should attempt meetings with few to no interruptions to compare outcomes. Small sample sizes may provide unreliable results; a similar study with larger sample size will be needed to verify the results. In addition, the literature reported that 1 hour was the best time to spend in a journal club meeting, further research should be conducted to determine if 1 hour is the ideal time for a meeting or if 30 or 45 minutes would be more effective when a meeting is held during a nurse's shift. A time controlled RCT should be done to find the appropriate amount of time required to positively influence EBP beliefs. An intervention of greater duration may produce different outcomes, this is another opportunity for future research.

Finally, the literature anecdotally recommended small interprofessional groups would be advantageous for journal club meetings, this study had only RNs volunteers. Future research should incorporate additional professions and a variety of journal publications.

Conclusion

Demonstration of increased beliefs in EBP due to participation in CNS led journal club provides evidence that can be used to encourage others within the unit to participate in the meetings and justifies the continuation of the meetings. This study demonstrated outcomes that inspire the continuation and the creation of regularly scheduled in-person journal club meetings. The data collected contributes to the understanding of influence of journal club participation on EBP beliefs in clinical nurse staff.

Journal Club has traditionally been used through many medical fields to maintain current knowledge of the new evidence that is being found each day. Nurses are often busy with patient care needs, as seen in this study, but it is important for patient safety and best practices for them to update their knowledge of evidence-based clinical practice.

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Data Tables

Table 1

Pre-Survey Demographic Data

Characteristics	n (%)
Gender	
Female	9 (81.81)
Male	2 (18.18)
Age	
≤ 19	0
20 to 24	1 (9.09)
25 to 29	2 (18.18)
30 to 34	0
35 to 39	3 (27.27)
40 to 44	2 (18.18)
≥ 45	3 (27.27)
Race	
White or Caucasian	9 (81.81)
Asian	1 (9.09)
Black or African American	1 (9.09)
Highest Education Level	
Diploma	1 (9.09)
Associate's	4 (36.36)
Bachelor's	4 (36.36)
Master's	2 (18.18)
Doctoral	0
Clinical Nurse Ladder Level	
Clin 1	3 (27.27)
Clin 2	6 (54.55)
Clin 3	2 (18.18)
Time as a Nurse	
< 1 year	3 (27.27)
1-2 years	0
2-3 years	2 (18.18)
3-5 years	1 (9.09)
> 5 years	5 (45.45)

Table 2

Post-Survey Questionnaire

Education Level	Associates	Bachelors	Masters	Total
Questions	n (%)	n (%)	n (%)	n (%)
How many Journal Club meetings did you attend?				
1	0	2(50)	1(50)	3 (33.33)
2	0	1(25)	0	1 (11.11)
3	2(66.67)	0	1(50)	3 (33.33)
4	1(33.33)	1(25)	0	2 (22.22)
Did you recommend any topics?				
Yes	2(66.67)	1(25)	1(50)	4 (44.44)
No	1(33.33)	3(75)	1(50)	5 (55.56)
Did you read the articles prior to the meetings?				
Yes	0	1(25)	1(50)	2 (22.22)
No	1(33.33)	2(50)	1(50)	4 (44.44)
Sometimes	2(66.67)	1(25)	0	3 (33.33)
Would you be interested in continuing Journal Club meetings in the future?				
Yes	1(33.33)	2(50)	2(100)	5 (55.56)
No	1(33.33)	0	0	1 (11.11)
Maybe	1(33.33)	2(50)	0	3 (33.33)

Table 3

Changes in Evidence Based Practice Belief Scale Score due to Participation in Journal Club Meetings

Variable	Pre Score			Post Score			Paired Differences							
	<i>M</i>	<i>SD</i>	Std. Error Mean	<i>M</i>	<i>SD</i>	Std. Error Mean	<i>M</i>	<i>SD</i>	Std. Error Mean	95% CI of Difference		<i>t</i>	df	Sig. (2-tailed)
Overall	60.78	6.51	2.17	67.56	5.03	1.68	6.78	5.70	1.90	2.40	11.16	3.57	8	**0.007
Education														
Associates	57.00	3.61	2.082	67.67	1.16	0.67	10.67	2.89	1.67	3.50	17.84	6.40	2	*0.024
Bachelors	63.50	8.35	4.17	70.00	6.33	3.16	6.50	6.56	3.28	-3.93	16.93	1.98	3	0.142
Masters	61.00	5.66	4.00	62.50	2.12	1.50	1.50	3.54	2.50	-30.27	33.27	0.60	1	0.656
Time as RN														
< 1 year	59.33	6.03	3.48	66.67	2.52	1.45	7.33	7.64	4.41	-11.64	26.31	1.66	2	0.238
2 - 5 years	61.50	3.54	2.50	69.00	9.90	7.00	7.50	6.36	4.50	-49.68	64.68	1.667	1	0.344
> 5 years	61.50	9.04	4.52	67.50	5.32	2.66	6.00	5.72	2.86	-3.10	15.10	2.10	3	0.127
Meetings														
1 or 2	61.00	4.24	2.12	67.50	6.19	3.10	6.50	6.56	3.28	-3.93	16.93	1.998	3	0.142
3 or 4	60.60	8.44	3.78	67.60	4.67	2.09	7.00	5.70	2.55	-0.08	14.08	2.75	4	^0.052

Note. ** $p < 0.01$, * $p < 0.05$, ^ $p = 0.05$

Table 4

Mean, Median, and Mode from Evidence-Based Practice Belief Scale Survey Before and After Participation in Journal Club Meetings

Question #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Pre																
Mean (SD)	4.67 (0.50)	3.56 (1.1)	4.22 (0.83)	4.33 (0.71)	4.56 (0.53)	3.78 (0.97)	3.56 (0.53)	3.78 (0.97)	4.44 (0.53)	3.33 (1.0)	2.33 (0.87)	3.56 (0.73)	2.89 (0.93)	3.33 (1.0)	3.44 (0.73)	3.44 (0.73)
Median	5.00	4.00	4.00	4.00	5.00	4.00	4.00	4.00	4.00	3.00	2.00	3.00	3.00	4.00	4.00	4.00
Mode	5	4	5	*4 & 5	5	4	4	4	4	*3 & 4	2	3	2	4	4	4
Post																
Mean (SD)	4.78 (0.44)	4.33 (0.87)	4.44 (0.53)	4.67 (0.50)	4.89 (0.33)	4.44 (0.73)	4.33 (0.50)	3.89 (0.78)	4.78 (0.44)	4.33 (0.71)	2.56 (1.1)	4.33 (0.71)	2.56 (1.1)	4.33 (0.71)	4.44 (0.53)	4.44 (0.53)
Median	5.00	5.00	4.00	5.00	5.00	5.00	4.00	4.00	5.00	4.00	2.00	4.00	3.00	4.00	4.00	4.00
Mode	5	5	4	5	5	5	4	4	5	*4 & 5	2	*4 & 5	3	4	4	4

Note. * = Multiple modes exist. Scales: 2=Disagree, 3=Neither agree nor disagree, 4=Agree, 5=Strongly agree.