

# A paediatric nurses' journal club: developing the critical appraisal skills to turn research into practice

## AUTHORS

### Margaret Purnell

MAppSci (Library & Information Mgt), BN (Midwifery),  
DipAppSci (Nursing)  
Clinical Librarian, Library Services, Northern Territory  
Department of Health,  
Building 4, Royal Darwin Hospital, Darwin, Northern  
Territory, Australia  
margaret.purnell@nt.gov.au

### Dr Virginia Skinner

PhD, MN (Hons), BHSc (Nursing), RN, RM  
Senior Midwifery & Nursing Advisor, Office of Chief  
Nursing and Midwifery Officer, Northern Territory  
Department of Health,  
Health House, Mitchell St, Darwin, Northern Territory,  
Australia  
virginia.skinner@nt.gov.au

### Gina Majid

Grad Dip (Paediatric Nursing), Grad Cert (Clinical  
Education), BN, RN  
Clinical Nurse Educator, Paediatric Unit, Royal  
Darwin Hospital,  
Rocklands Drive, Darwin, Northern Territory, Australia  
gina.majid@nt.gov.au

## KEYWORDS

nursing, journal club, critical appraisal, survey, paediatrics, confidence

## ABSTRACT

### Objectives

The aim of this study was to determine if implementation of a regular journal club improves critical appraisal confidence and facilitates integrating research literature into nursing practice.

### Design

A survey was distributed to all paediatric nurses across two wards who had potentially attended the journal club in the previous two years.

### Setting

This small scale study was undertaken at a northern Australian hospital.

### Sample

The surveys were distributed to 58 nurses from the two paediatric wards and 33 of them responded but only 29 of these had attended the journal club leaving 29 surveys to be analysed for this study.

### Results

The majority of responses to the survey questions were positive. When statistically analysed by Pearson's correlation, four variables showed a strong association: increased confidence with interpreting research literature, developing critical appraisal skills, the sharing of knowledge and integrating evidence-based practice into nurses' workplace.

A number of changes in practice have occurred as a direct result of the journal club.

### Conclusion

The results from this study support the benefits of utilising nursing journal clubs to promote clinical practice that is informed by research evidence.

## INTRODUCTION

Health professionals are required to continually assess their clinical practice to provide the best patient care. Evidence-based practice provides a structure for finding and evaluating the latest current research evidence and integrating it into daily clinical care. This is fundamental to optimising patient outcomes (Profetto-McGrath et al 2010).

Keeping clinically current in the nursing profession has become more important in recent years, especially with increasing research being published to support changes in practice. Honey and Baker (2011) identified a clear need for healthcare professionals to be more research aware in order to meet the requirements of professional registration and to deliver patient care that is informed by evidence. There are a number of strategies that can be used to achieve these standards. One of these strategies is to initiate and integrate a regular journal club into the professional development time of the workplace environment.

This paper outlines a study that was conducted to explore the impact of one such hospital-based journal club. The project aimed to assess whether implementation of a regular journal club improves critical appraisal confidence and facilitates integrating research literature into nursing practice.

## BACKGROUND

### Literature

Journal clubs in the medical profession have been running for well over 100 years (Lachance 2014). Nursing journal clubs are a more recent event as nursing pushed to become more professional in the 1980s and 1990s (St. Pierre 2005). There is no existing standard method for gaining the most educational benefit from a journal club. Member contribution appears to be a key factor to facilitating meaningful discussion (Nesbitt and Barton 2014) as well as having a motivated group leader (Deenadayalan et al 2008).

A journal club can be defined as a group of individuals who meet regularly to discuss and critically evaluate recent research articles in the academic literature. This environment provides a connection or 'bridging the gap' between the best research and application to clinical practice (Bilodeau et al 2011; Stallings et al 2011; Goodfellow 2004), thereby identifying a common underlying philosophy for sharing of current knowledge to improve patient care (Deenadayalan et al 2008).

Review articles have discussed the effectiveness of journal clubs and report on studies that found a significant impact on at least one learning outcome measure (Deenadayalan et al 2008). There is growing evidence that journal clubs are a successful way to improve confidence, research awareness and knowledge (Lachance 2014; Honey and Baker 2011). The application of this knowledge may then increase the nurses' confidence in clinical practice and pave the way for evidence-based practice.

The benefits of a hospital-based journal club include promoting a better understanding of the research process and improving the ability to critically appraise journal articles (Mattila et al 2013; Steenbeek et al 2009). Further advantages include creating a supportive environment for discussion (Nesbitt 2013) and identifying topics for further research (Hughes 2010). The structured use of a critical appraisal tool to determine the quality of the study and a set of guidelines for critiquing research is a common feature of successful journal clubs (Dirschl et al 2003).

Acquiring the confidence to critically appraise journal articles has been studied. One study (Mukherjee et al 2006) surveyed participants attending a multidisciplinary pilot study journal club, reporting a priori and post hoc results. Before journal club attendance, 22% of participants felt confident appraising the research. Following attendance at the journal club sessions, 78% of participants felt confident, showing a marked improvement in this attribute.

Annually in Australia, nurses register with the Health Practitioner Regulation Agency and confirm that they comply with competencies set out by the Nursing and Midwifery Board of Australia (NMBA). These competencies state that the Registered Nurse needs to use best available evidence and nursing expertise in the provision of nursing care and that they demonstrate analytical skills to access and evaluate health information and research (NMBA 2006). Nurses can work on achieving these competencies with the support and encouragement of attending a regular professional journal club.

This review of the literature has revealed that investigations into the benefits of nursing journal clubs mostly consist of descriptive studies, literature reviews or instructions on 'How to run a Journal Club'. Therefore, this research project addresses a gap in the literature that focuses on identification of correlational associations between variables to increase nurses' confidence in critiquing research to facilitate evidence-based practice.

### **The Monthly Journal Club**

A monthly journal club was commenced in 2012 to support and encourage the paediatric nurses at a northern Australian hospital to engage in evidence-based practice, ensuring practice was current. The main aim at the time was to improve patient outcomes in the paediatric unit. The development of a working relationship between the Paediatric Clinical Nurse Educator and the Clinical Librarian began in September 2011 when the Librarian presented an Evidence-Based Practice for Health Professionals class. Discussions commenced to initiate a journal club and the Educator and Librarian have continued to collaborate to lead the group. The liaison and communication underpinning their leadership has been beneficial to the promotion and attendance at the monthly sessions.

Another crucial element of this journal club's success was attributed to the Educator encouraging nursing staff to participate. The journal club sessions were informal, supportive and friendly. The sessions were held monthly for one hour in the early afternoon (to maximise attendance from two crossover shifts on the wards). Numbers of staff attending the monthly journal club in the two years leading up to the survey ranged from five to 17. Nursing staff involved in the paediatric journal club consisted of a vast mix of backgrounds with baseline skills that included hospital-trained staff, overseas nurses for whom English was a second language, postgraduate and recently qualified new graduate nurses.

The Educator organised a different speaker each month to give a short presentation about an article. Journal club topics were chosen using either recent clinical cases, questions arising from current practice or recent articles of interest. Topics discussed included: fasting times on paediatric wards, oral sucrose for paediatric pain, acute rheumatic fever, falls in hospital, bedside handover and bronchiolitis.

The Librarian contributed to the journal club by searching for relevant research articles and presenting information on methods for interpreting research study findings. The Librarian also attended the monthly sessions to support discussions around the critical analysis of results. A webpage was created as part of the Library's Paediatric Subject Guide to link to the articles and presentations.

Before commencing the journal club, the Educator and Librarian discussed the importance of using a simple critical appraisal tool (a checklist with analysis questions) for interpreting the research article during each meeting. A number of tools were reviewed for use during the journal club sessions but it was felt important to develop a user-friendly and simple critical appraisal tool that suited this group's needs. The Librarian developed a simple one page checklist.

Time restraints and shift work resulted in staff not always reading the allocated article prior to the meeting. However, they were still encouraged to attend and become involved in discussions. Following a short presentation, the nurses were given the opportunity to read and ask questions about the article and they discussed issues surrounding application to practice.

## METHODS

This study was undertaken using a quantitative correlational approach. The sample population comprised of nurses from two paediatric wards (a total of 58 staff) who had potentially attended one or more journal club meetings. An online survey was used to collect responses. The survey instrument was written and developed using the web-based Survey Monkey questionnaire that the nurses could access via a link. The survey consisted of 11 questions. Two were background questions which focused on the respondent's nursing category and the number of years of nursing experience. The next three questions focused on whether or not the respondent had attended one or more journal club meetings. The survey ended here for those who had not attended. Four questions were statements requiring a response on a five point Likert scale from strongly agree to strongly disagree. The last two questions were qualitative open-ended to explore the views of respondents and to gather recommendations for future journal club meeting improvements.

The link to the survey was distributed via email and from a survey icon on the Health Library's Paediatrics Journal Club webpage. The survey was able to be accessed for six weeks in August and September, 2014. The data collected were de-identified and consent was implied once the survey was completed and submitted.

Statistical analysis was performed in Microsoft Excel and Statistical Package for Social Sciences (SPSS) Version 21 for Windows. Initially, the response data for the survey questions were converted to numeric scores from the Likert scale. Cronbach's alpha was calculated on all questions to determine reliability for this sample of nurses. Cronbach's alpha ( $\alpha$ ) is a measure of internal consistency or split half reliability (Field 2013). It is usually calculated for each variable and will be 1 if all items are the same and 0 if none of them are related. Satisfactory values are between 0.7 and 0.8 (Bland and Altman 1997). Pearson's correlation coefficient ( $r$ ) is measured to determine the relationship between two variables. There is a strong relationship if this coefficient is between 0.6 and 0.9 (Moule 2015). The researchers in this study wanted to determine if variables were associated with each other. For example, does developing critical appraisal skills enhance practising evidence-based practice?

Ethics approval was obtained from the Northern Territory Department of Health and Menzies School of Health Research Human Research Ethics Committee.

## RESULTS

### Demographics

The surveys were distributed to 58 nurses from the paediatric wards and 33 responded, a response rate of 57%. Twenty-nine completed surveys were analysed. The four incomplete surveys were participants who had not attended any of the journal club meetings. Respondents who had not attended any of the meetings only answered the first four questions. Demographic data are represented in table 1.

**Table 1: Demographic Data of Participants**

Demographic Variables	n	%
<b>Nurse Classification</b>		
New Graduate	3	9
Registered Nurse	24	73
Educator	3	9
Manager	3	9
<b>TOTAL</b>	<b>33</b>	<b>100</b>
<b>Nursing Experience (years)</b>		
Less than one	5	15
One to five	8	24
Five to ten	5	15
Over ten	15	46
<b>TOTAL</b>	<b>33</b>	<b>100</b>

## FINDINGS

The participants were asked how often they had attended a journal club session, 12 of the respondents (41%) had been three or more times, whereas 11 had been once and six had been twice.

Four questions of the survey were Likert scale rating questions requiring one of five responses ranging from strongly agree to strongly disagree. The majority of responses to all four questions were positive (see table 2).

Nearly three-quarters of respondents (n=21) either strongly agreed or agreed that attending journal club had increased their confidence with critically appraising journal articles. The vast majority (97%) of respondents (n = 28) agreed or strongly agreed that attending the journal club facilitated sharing of knowledge and interaction between nurses. After attending one or more journal club sessions, 97% of respondents (n=28) agreed or strongly agreed that discussion in these sessions enabled them to think about ways they could change practice on the ward. Also, the majority (93%) of respondents (n = 27) either agreed or strongly agreed that attending the journal club sessions were a useful tool to promote evidence-based practice in the workplace.

**Table 2: Descriptive data of benefits of attending journal club**

Statement	Strongly Agree n(%)	Agree n(%)	Neither Agree nor Disagree n(%)	Disagree n(%)	Strongly Disagree n(%)	Total answered question n(%)
Attending journal club has improved my confidence in critically appraising journal articles	8(27.5)	13(45)	8(27.5)	0(0)	0(0)	29(100)
Journal club facilitates the sharing of knowledge and interaction between nurses	10(34.5)	18(62)	1(3.5)	0(0)	0(0)	29(100)
Journal club discussions have enabled me to reflect on ways I can change practice on the ward	9(31)	19(65.5)	1(3.5)	0(0)	0(0)	29(100)
Journal club is a useful tool to promote evidence-based practice in the workplace	10(34.5)	17(58.6)	2(6.9)	0(0)	0(0)	29(100)

When calculated using Cronbach's alpha, these four questions had values of 0.733, 0.807, 0.739 and 0.759 respectively. These results yielded good reliability considering the small sample size.

Pearson's correlation coefficient (r) was also calculated to determine the strength of association between the four questions (variables). There was a positive association between all the variables (see table 3).

**Table 3: Correlational data of benefits of attending journal club**

	Facilitates sharing of knowledge	Discussions enabled me to reflect on change in practice	Tool to promote evidence-based practice in workplace
Confidence Critical Appraisal	.698**	.627**	.639**
Facilitates sharing of knowledge	1	.690**	.727**
Discussions enabled me to reflect on change in practice	.690**	1	.663**
Tool to promote evidence-based practice in workplace	.727**	.663**	1

\*\* Correlation is significant at the  $p < 0.01$  level (2-tailed)

## DISCUSSION

### Confidence with Critical Appraisal

This study investigated a number of factors relating to participation in a paediatric journal club. A key component was the ability to appraise research articles, a skill that is developed continuously with practice. Critical appraisal provides a framework for systematically clarifying the strengths and weaknesses of a research study to determine validity and application of the findings (Young and Solomon 2009). It is vital for assimilation of research into practice (Rycroft-Malone and Bucknall 2010).

The interpretation of research study results appears to be a barrier for many nurses as they “struggle to understand research studies and find reading and critiquing the content intimidating” (Gloeckner and Robinson 2010, p267). One of the key findings in this study was that confidence in critical appraisal was positively associated with discussions enabling a change in practice ( $r = .627, p < 0.01$ ) so that regular, ongoing discussions about evidence-based research articles in the workplace may ameliorate nurses’ apprehension in the future.

### Sharing Knowledge

The finding that facilitating sharing of knowledge was positively associated with using the journal club as a tool to promote evidence-based practice in the workplace ( $r = .727, p < 0.01$ ) is supported by other studies that also recommend knowledge sharing in a journal club setting as a way of stimulating evidence-based practice in patient care (Nesbitt and Barton 2014; Maaskant et al 2013).

An integral part of the success of a journal club is identifying leaders to coordinate and assist the participants with the knowledge sharing in the sessions. The leaders may not guide the discussion each time but retain responsibility for promoting the meetings, distributing articles in advance and establishing the format for discussion (Luby et al 2006). The leadership shown by the Educator and Librarian may relate to the finding that facilitating sharing of knowledge was positively associated with discussions enabling reflection about change of practice ( $r = .690, p < 0.01$ ).

### Application to Clinical Practice

The aim when commencing this journal club in 2012 was to improve patient outcomes in the Paediatric Unit. Therefore, discussing how the research literature could fit into local practice has been a significant part of the monthly journal club meetings. Results from this study found that discussions enabling reflection about change in practice was positively associated with using the journal club as a tool to promote evidence-based practice in the workplace ( $r = .663, p < 0.01$ ).

Practice changes that have occurred as a direct result of this journal club include: the development of a falls prevention and management guideline, a working group to discuss procedure fasting times, a new visual child-friendly pain scale and updating procedures for medication safety.

The findings from this study suggest that participation in a journal club has a favourable effect on a number of aspects that can potentially improve nursing practice. The paediatric journal club meetings have now been ongoing for a period of four years.

### Limitations

Even though the sample size of this study was small, results still yielded statistically significant findings providing evidence that larger studies in this area are worth pursuing.

### CONCLUSION

This journal club study highlights the positive correlation between being part of a regular journal club and developing critical appraisal skills, the confidence with interpreting research literature, the sharing of knowledge and integrating evidence-based practice into nurses' workplace.

Despite the small sample size, this research contributes to the evidence that nurses developing these skills enables reflection on clinical practice and also influences possible changes in patient care.

It is important for health professionals working in a hospital setting to take responsibility for their own learning by professional development activities such as reading and appraising the published research in their field as well as keeping up to date with general topics in evidence-based practice. This can be more successfully achieved with the support and promotion of a regular journal club.

### RECOMMENDATIONS

Regular participation in a journal club can facilitate reflection on clinical practice and the integration of research into patient care.

Using a simple critical appraisal tool and having committed leaders plays an important role in the success of a journal club

Nurse Educators are encouraged to include a monthly journal club in the professional development time on their wards

### REFERENCES

- Bilodeau, I., Pepin, J. and St. Louis, L. 2011. Journal club in a critical care unit: an innovative design triggering learning through reading and dialogue. *Dynamics*, 23(1):18-23.
- Bland, J. and Altman, D. 1997. Statistics Notes: Cronbach's alpha. *British Medical Journal*, 314: 572.
- Deenadayalan, Y., Grimmer-Somers, K., Prior, M. and Kumar, S. 2008. How to run an effective journal club: a systematic review. *Journal of Evaluation in Clinical Practice*, 14(5):898-911.
- Dirschl, D.R., Tornetta, P. and Bhandari, M. 2003. Designing, conducting, and evaluating journal clubs in orthopaedic surgery. *Clinical Orthopaedics and Related Research*, 413:146-157.
- Field, A. 2013. *Discovering Statistics using SPSS*, SAGE Publications, London.
- Gloeckner, M.B. and Robinson, C.B. 2010. A nursing journal club thrives through shared governance. *Journal for Nurses in Professional Development*, 26(6):267-270.
- Goodfellow, L.M. 2004. Can a journal club bridge the gap between research and practice? *Nurse Educator*, 29(3):107-110.
- Honey, C.P. and Baker, J.A. 2011. Exploring the impact of journal clubs: a systematic review. *Nurse Education Today*, 31(8):825-831.
- Hughes, J. 2010. Developing a journal club that impacts practice. *Gastroenterology Nursing*, 33(1):66-68.
- Lachance, C. 2014. Nursing journal clubs: A literature review on the effective teaching strategy for continuing education and evidence-based practice. *The Journal of Continuing Education in Nursing*, 45(12):559-565.

- Luby, M., Riley, J.K. and Towne, G. 2006. Nursing research journal clubs: bridging the gap between practice and research. *Medsurg Nursing: official journal of the Academy of Medical-Surgical Nurses*, 15(2):100-102.
- Maaskant, J.M., Knops, A.M., Ubbink, D.T. and Vermeulen, H. 2013. Evidence-based practice: a survey among pediatric nurses and pediatricians. *Journal of Pediatric Nursing*, 28(2):150-157.
- Mattila, L., Rekola, L., Koponen, L. and Eriksson, E. 2013. Journal club intervention in promoting evidence-based nursing: Perceptions of nursing students. *Nurse Education in Practice*, 13: 423-428.
- Moule, P. 2015. *Making sense of research in nursing, health & social care* (5th ed). London: Sage.
- Mukherjee, R.A., Owen, K. and Hollins, S. 2006. Evaluating qualitative papers in a multidisciplinary evidence-based journal club: a pilot study. *Psychiatric Bulletin*, 30(1):31-34.
- Nesbitt, J. 2013. A two-site case study of nurses continuing professional development. *Nurse Education Today*, 33(8):896-900.
- Nesbitt, J. and Barton, G. 2014. Nursing journal clubs: A strategy for improving knowledge translation and evidenced-informed clinical practice: invited manuscript for the journal of radiology nursing, *Journal of Radiology Nursing*, 33(1):3-8.
- Nursing and Midwifery Board of Australia (NMBA). 2006. *National Competency Standards for the Registered Nurse*. Retrieved from <http://www.nursingmidwiferyboard.gov.au> (accessed 10.07.16).
- Profetto-McGrath, J., Negrin, K.A., Hugo, K. and Smith, K.B. 2010. Clinical nurse specialists' approaches in selecting and using evidence to improve practice. *Worldviews on Evidence-Based Nursing*, 7(1):36-50.
- Rycroft-Malone, J. and Bucknall, T. 2010. *Models and Frameworks for Implementing Evidence-Based Practice: Linking Evidence to Action*. Chichester, West Sussex: Wiley-Blackwell.
- St Pierre, J. 2005. Changing nursing practice through a nursing journal club. *Medsurg nursing: official journal of the Academy of Medical-Surgical Nurses*, 14(6):390-392.
- Stallings, A., Borja-Hart, N. and Fass, J. 2011. New Practitioners Forum: Strategies for reinventing journal club. *American Journal of Health-System Pharmacy*, 68(1):14.
- Steenbeek, A., Edgecombe, N. and Durling, J. 2009. Using an interactive journal club to enhance nursing research knowledge acquisition, appraisal, and application. *International Journal of Nursing Education Scholarship*, 6(1).
- Young, J.M. and Solomon, M.J. 2009. How to critically appraise an article. *Nature Reviews Gastroenterology & Hepatology*, 6:82-91.