

Education The journal club: a modern model for better service and training

Authors Yousri Afifi / James Davis / Khalid Khan / Mary Publicover / Harry Gee

In addition to enabling members to keep abreast of the current medical literature, a journal club is an important forum for teaching research methodology, clinical epidemiology and statistics, as well as providing opportunities for training in clinical decision making and gaining critical appraisal skills. It can be used to facilitate an evidence based approach to problem solving, as a tool for informing guideline development and to enable an exchange of insights regarding clinical problems. It also provides an opportunity for social interaction. In this paper we discuss the advantages and disadvantages of different types of journal clubs. We conclude that they are an important part of continuing medical education and that they can form the basis for positive advances in clinical practice.

Keywords continuing medical education / critical appraisal / evidence based medicine / journal club / problem solving

Please cite this article as: Afifi Y, Davis J, Khan K, Gee H, Publicover M. The journal club: a modern model for better service and training. *The Obstetrician & Gynaecologist* 2006;8:186–189.

Author details

Yousri Afifi PhD MRCOG

Consultant in Obstetrics and Gynaecology

The Birmingham Women's Hospital NHS Trust,
Edgbaston, Birmingham B15 2TG, UK

E-mail: afifi@doctors.org.uk

(corresponding author)

James Davis BMedSci (Hons), MBChB

Clinical Research Fellow in Medical

Education

The Birmingham Women's Hospital NHS Trust,
Birmingham, UK

Khalid Khan MRCOG

Professor of Obstetrics and Gynaecology

The Birmingham Women's Hospital NHS Trust,
Birmingham, UK

Mary Publicover

Trust Librarian

The Birmingham Women's Hospital NHS Trust,
Birmingham, UK

Harry Gee MD FRCOG

**Consultant in Obstetrics and Director of
Education Resource Centre**

The Birmingham Women's Hospital NHS Trust,
Birmingham, UK

Introduction

A journal club can be defined as a group of individuals who meet regularly to discuss articles in the current medical literature.¹ The first reported club was led by Sir James Paget in 1835 at St Bartholomew's Hospital in London and the first known regular club was reported by Sir William Osler at McGill University in 1875. The first article examining a journal club as an educational tool was by Mattingly in 1966.^{1,2} Currently, the journal club is a common educational tool and its role in contemporary medical education for postgraduates is considerable. Different surveys have shown that provision of a journal club has been integrated into 70–95% of residency programmes, both in teaching and general hospitals.^{2,3}

Recent trends in medical education are rooted in the realisation that the aim of teaching is to facilitate learning. In particular, programmes should instil deep learning because, in contrast to surface learning, which only involves memorising and reproducing information (and forgetting soon after an examination), the deep approach helps trainees make sense of the subject matter.⁴ Deep learning develops through steps that allow constant refinement of newly acquired knowledge. The new medical era emphasises the use of evidence, experience and patients' views. The strategy of the journal club must aim to foster deep and life-long learning so that evidence can be usefully employed, along with experience and patients' preferences.

Aims of the journal club

One of the many aims is to keep abreast of the medical literature, which has expanded greatly over recent years. Medical indexes contain thousands of medical journals, with more than 400 000 articles added every year.² It has been reported that the majority of hospital consultants only have one hour to read journals each week and that 75% of house officers have no time at all.⁵ The journal club has, therefore, become an integral part of continuous medical education.

A journal club is an important forum for teaching research methodology, clinical epidemiology and statistics, and should aim to provide the following:

- an opportunity for training in clinical decision making and for gaining critical appraisal skills
- an evidence based approach to problem solving
- a tool for informing guideline development
- an exchange of insights regarding clinical problems
- an opportunity for social interaction.

At the Birmingham Women's Hospital we have found that weekly journal club meetings are very effective.

Types

Traditional

In the traditional type of journal club junior doctors select articles and seniors critique their presentation. This process often involves selecting random articles and appraising them without the use of guidelines for validity and clinical application. Selection of an article at random may not be relevant to current clinical practice, so the opportunity for developing critical thinking in the context of clinical care may be absent. In the traditional journal club evidence based practice and clinical adoption are not the true motivating factors. As they are untrained in medical research, most trainees do not correctly appraise the articles. Without critical appraisal the club becomes an exercise solely for presentation without learning.

Problem and evidence based

As a first step the trainee identifies a current clinical problem that has created uncertainty regarding its best management. Clinical problems are then discussed with an appropriate mentor and then converted into focused, answerable questions by defining the population, intervention, possible comparison and outcome. The identification of the problem and formulation of the question is led by the trainee and guided by the mentor.⁶

The second step is to search the literature to identify the relevant articles. This process should be structured and conducted using keywords and search filters; an information specialist can often help guide this process. The potentially relevant articles are then retrieved.

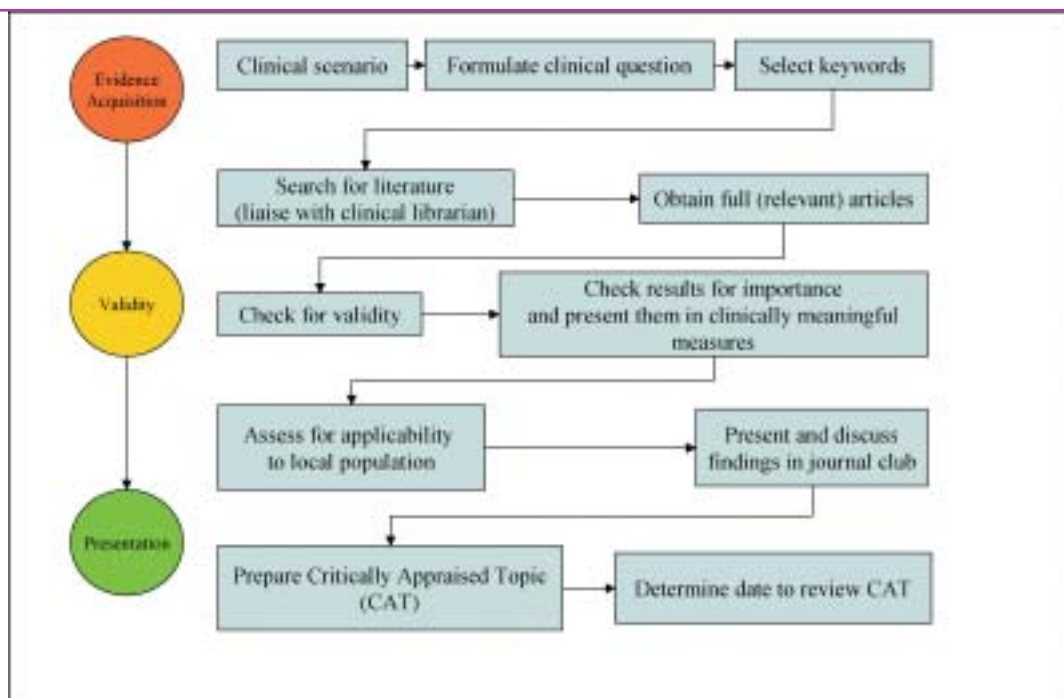
The third step is a critical appraisal of the selected articles. This must be based on structured guidelines.⁷ It can be done either by checklist or by computer software. The appraisal should be reviewed by a mentor with experience in critical appraisal.

The fourth step is presentation and discussion of the findings. The presenter should also have the chance to reflect and receive peer appraisal. The final version of the critical appraisal is stored for further review and updating.

Methodology teaching

In this type of club one clinical study is selected and all attendees are provided with the selected articles and a series of stimulus questions. The questions assess the quality of the research, the appropriateness of the data and methods and the validity of the conclusions. The discussion focuses on issues raised by the stimulus questions rather than on the clinical aspects of the paper. This type of club requires intensive faculty involvement and rigorous facilitation to accomplish its goal.

Figure 1
How a journal club can be run and integrated with clinical practice



Combined problem based with methodology teaching

The evidence based approach is used as before. Part of the presentation time is used to brief attendees on the research methods used in the presented evidence. The briefing helps increase the knowledge of all participants about the methodology and evidence searches.

Figure 1 shows how a journal club can be run and integrated with clinical practice.

Successful structuring

Leadership

To be successful it is important for journal clubs to have a motivated individual or small group committed to the organisation and running of the club. In one study⁷ it was shown that having one leader was significantly correlated with the effectiveness of the club. However, the active involvement of the residents in planning and operating the club is associated with its longevity and success. It is reported that attendance is greater if the club has the support of a faculty willing to teach biostatistics and clinical epidemiology formally.⁸ The development of a balance between the independence of the club and its ownership by trainees is the key to success.

Involvement of librarians and information specialists

Librarians and information specialists have become integrated with journal club teams and contribute to the quality of critically appraised topics generated. The library team helps to provide one-to-one training to search databases according to a protocol, directing the searcher to the highest levels of evidence first. The library team is familiar with

searching syntax and indexing languages. They are able to draw on current methodological filters and search terms which direct the search to an appropriate study methodology for the clinical question. Librarians can join ward rounds and clinical teams and identify clinical questions with juniors, after which they can create searches with those juniors for the journal club. They can also help presenters judge the best article for appraisal, procure articles, advise on appraisal, assist with CATmaker (critically appraised topics) and PowerPoint software and administer the whole process. Finally, librarians are often more accessible than clinical experts. The library has the potential to act as a true information service, a hub and a breathing space from the clinical front where questions can be explored. This interaction with the librarian, in our experience, leads to higher quality appraisals and presentations.

At the Birmingham Women's Hospital, the Trust librarian has been involved in the journal club for the last four years, with remarkable success. Auditing of the critical appraisal topics revealed that, in the years before the involvement of the librarian, for 22% of topics the most relevant articles were missed, compared with 3% in the years afterwards.⁹ This demonstrates the value of the librarian in improving the quality of the club and the level of the training.

Useful resources

CATmaker

CATmaker software was developed at the Centre for Evidence Based Medicine in Oxford, UK.¹⁰ It has a number of important uses with regards to the journal club. It stores the research question and search strategies, helps frame the question itself,

and allows appraisal, both of a working draft ('Kitten') and the final form. It can carry out important clinical calculations, including confidence intervals, likelihood ratios, odds ratios and numbers needed to treat, and can use an electronic nomogram to generate post-test probabilities. It generates files which can be formatted, saved, stored and printed using any word processing software. It is the electronic offspring of a paper-based system developed by general internal medicine fellows at McMaster University in Canada.

CATmaker is evidence and patient based. It promotes the acquisition and polishing of literature searching and critical appraisal skills, as well as the integration of evidence with clinical expertise to form patient care decisions. A feasibility study¹¹ suggested that there was a significant increase in reading time and knowledge of critical appraisal when CATmaker was used in the journal club.

Structured review and check list

The use of checklists to guide the trainee through the appraisal was assessed in one study.³ The implementation of the checklist was found to increase satisfaction and improve the perceived educational value without increasing the work load. Using one provides guidance, especially for those unfamiliar with appraisal, and ensures that important issues regarding papers are not missed.

Organisational factors

Sidorov¹² examined the different factors associated with a successful club in terms of attendance and continuity. He found that mandatory attendance, regular provision of food, formal methodology teaching and presence of a large number of house staff were significantly associated with high attendance and a continuous existence of two years or longer.

Assessment is a major determinant of learning. The evaluation of trainees' performance at a journal club as part of their formative assessment and personal development is an important step towards higher quality journal clubs.

Problems and solutions

The evidence based approach can be misinterpreted as one that rejects the value of

clinical expertise. This is not wholly true, as it is a blend of evidence and experience. The problem can be overcome by gathering support from senior clinicians and by recognising their judgement in the management of difficult cases. The club will have added value in the light of experience. The institution has to be convinced that the club is a worthwhile exercise for it to be a success.

Journal clubs can be run in smaller units where there is no clinical librarian, although it is always best to involve one when possible.

Conclusion

A journal club is an integral part of doctors' continuing medical education and an important step towards truly evidence based practice. For it to be beneficial its approach must be one in which the knowledge, attitudes and skills gained have a positive effect on development. For this to be accomplished, journal clubs must be run using a solid and successfully evidenced approach. Well-run clubs can form the basis for positive advances in clinical practice. High quality, relevant appraisals from a journal club can be presented at multidisciplinary guideline meetings and changes to hospital practices can be positively advanced. At the Birmingham Women's Hospital, journal club appraisal has formed an important component of the formation of our guidelines.

References

- 1 Linzer M. The journal club and medical education: over one hundred years of unrecorded history. *Postgrad Med J* 1987;**63**:475–8.
- 2 Dirschl D, Tornetta P 3rd, Bhandari M. Designing, conducting, and evaluating journal clubs in orthopaedic surgery. *Clin Orthop Relat Res* 2003;**413**:146–57.
- 3 Burstein JL, Hollander JE, Barlas D. Enhancing the value of journal club: use of a structured review instrument. *Am J Emerg Med* 1996;**14**:561–3.
- 4 Gibb G. The nature of quality of learning. In: *Improving the Quality of Student Learning*. Bristol: Technical & Educational Services Ltd; 1992 p. 1–11.
- 5 Khan KS, Gee H. A new approach to teaching and learning in journal club. *Med Teach* 1999;**21**:289–93.
- 6 Dwarakanath LS, Khan KS. Modernizing the journal club. *Hosp Med* 2000;**61**:425–7.
- 7 Heiligman RM, Wollitzer AO. A survey of journal clubs in US family practice residencies. *J Med Educ* 1987;**62**:928–31.
- 8 Moberg-Wolff EA, Kosasih JB. Journal clubs. Prevalence, format, and efficacy in PM&R. *Am J Phys Med Rehabil* 1995;**74**:224–9.
- 9 Coomarasamy A, Latthe P, Papaioannou S, Publicover M, Gee H, Khan KS. Critical appraisal in clinical practice: sometimes irrelevant, occasionally invalid. *J R Soc Med* 2001;**94**:573–7.
- 10 Centre for Evidence-Based Medicine [www.cebm.net/catmaker.asp].
- 11 Khan KS, Dwarakanath LS, Pakkal M, Brace V, Awonuga A. Postgraduate journal club as a means of promoting evidence-based obstetrics and gynaecology. *J Obstet Gynaecol* 1999;**19**:231–4.
- 12 Sidorov J. How are internal medicine residency journal clubs organised, and what makes them successful. *Arch Intern Med* 1995;**155**:1193–7.