

## The journal club and its practices

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### ABSTRACT

In the era of information explosion, it is impossible for anyone to keep himself up-to-date with the literature by reading alone. Moreover there is vast amount of un-useful information added each day in the literature. Someone has to remain up-to-date with the valid and usable new information. Since its inception, journal club has been used as a useful meeting with the purposes of staying abreast of scientific publications and to judge their usability. In this article the concept of journal club and its practices were reviewed. The journal club has been proved to be a versatile program for its adaptable and multidirectional format to help the participants to develop many essential skills. It is now used as an academic program and is incorporated into curriculum in many institutes. Critical appraisal journal club models are most widely used to accomplish defined learning objectives. Evidence based journal club is one step ahead, through which practitioners judge the evidences and weigh its usability to bring a change in practice. Each institute should have defined journal club objectives for the development of students learning capability and also to develop and cultivate more skilled faculty. The practice of journal club can be adjusted and formatted according to the set goal of the organizing authority and the learning objectives of the participants.

**Key words:** Journal club, Critical appraisal, Evidence based medicine

### Introduction

A journal club is a group of individuals who meet regularly to critically evaluate recent articles in scientific literature. At the beginning, so far it is found in the literature; it was considered as facilitation of the distribution of unaffordable periodicals. Latter on it was progressed towards an educational meeting in which a group of individuals discuss current articles, providing a forum for a collective effort to review the latest research. It has also been used in postgraduate medical education for a long time as an educational intervention to improve certain learning skills. Journal clubs are usually organized around a defined subject in basic or applied research. Typically, each participant can voice their view relating to several questions such as the appropriateness of the research design, the statistics employed, and the appropriateness of the controls that were used, together with some other issues.<sup>1-8</sup>

Journal club is taken as an integral part of most training program. There might be an attempt to synthesize together the results of several papers,

even if some of these results might first appear to contradict each other. Albeit the results of the study are seen as valid, there might be a discussion of how useful the results are and if these results might lead to new research or to new applications. Journal club activity is a program having flexibility, adaptability, educational diversity and topical pertinence. It can be student centered, problem oriented and relevant to the learners' recent experiences or long term goal.<sup>5,9</sup>

### Evolution of Journal Club

Sir William Osler's journal club was reported as the first organized one in 1875 at McGill University in Montreal with the purpose to subscribe and distribute periodicals. A similar meeting was described earlier in the bibliography of Sir James Paget (1835-1854), a British surgeon, who describes a group at St. Bartholomew's Hospital in London in the mid-1800s as "a kind of club ... a small room over a baker's shop near the Hospital-gate where we could sit and read the journals".<sup>1,4</sup> The Journal

club as a part of evidence based practice was started in Birmingham Women's Hospital in July 1998.<sup>10</sup>

### **The Purposes and Benefits of Journal Clubs**

In the era of information explosion it is virtually impossible for anybody to go through and stay current with the updates even in a single discipline. Alper et al<sup>11</sup> estimated that it would take an 627.5 hours per month for a clinician to keep up with the primary care literature. The volume of information in relation to time and resources is so disproportionate. There are thousands of biomedical journals adding more than 400 000 articles each year. Near about three fourth of house officers have no time to read and a consultant can spend only one hour per day at best. If a person read 2 articles per day, by 1 year he will be 100 years back moreover only 2-3% of published articles are usable; others are either 'not worthy' or 'fraud'. Journal clubs are to address and or fix all these issues. In addition many people think that it helps them to learn and improve critical appraisal skills so it is adopted as a part of the academic and training programs in many institutes. The other goals of the journal club are to promote awareness of research skills and also a better understanding of research processes. The journal club helps to promote evidence based practice and encourage impact in clinical decision making. It is an effective activity to teach and learn reading and presentation skills, to nurture critical thinking skills and to develop skills to apply new knowledge to an unfamiliar situation. Journal club can improve social contact and understanding of current topics. Thus it helps to reduce the gap between research and practice. By stimulating debate and open discussion on basics of statistics, clinical epidemiology and decision making; the program has been turned out to be a universal one, not only in CPD and higher education but also in under graduate education and training.<sup>1, 9,12-17</sup>

### **Format of Journal Clubs**

The format of the journal club is not a fixed one, always there is a scope of innovation. The practice depends on the goal of the organizers, resources available, parameter defined to success

and need and interest of the target participants. Generally two variants, critical appraisal and evidence based journal clubs are described with many modifications. These includes traditional critical appraisal journal clubs, methodology teaching journal club, problem based journal clubs, combined problem and evidence based journal clubs, combined problem and methodology teaching journal clubs and so on.<sup>14,15,18</sup> Virtual journal club is an innovative addition, using internet technology which is 'initiated with the primary appraisal of an article by the participants at a divers location and time zone and the discussion is run with moderated comments on appraisal'.<sup>1,16</sup>

### *Critical Appraisal Journal Clubs*

In a study Armstrong and Pagell<sup>19</sup> concluded that only 3% of the published article contained useful knowledge as evidence for a better decision. Critical appraisal is the process of systemically examining research evidences to assess its validity and applicability for a particular problem or situation by paying more attention to the methods than the author's conclusion.<sup>9,20</sup> Traditionally a paper is selected and presented by the juniors and senior critique their presentation.<sup>18</sup> The practice has been improved by a problem based and guided approach to search the literature and using a critical appraisal checklist to review the appraisal in a session.<sup>21</sup> Although this type of journal club has got its limitations, as the paper selected may not be the most suitable evidence<sup>22</sup> but still the other learning objectives of a journal club can be very effectively achieved in this format. They are easier to organize and suitable for the trainees. The major advantages of this format is that the review is consistent and methodological and other weaknesses can be identified and thus to learn a practice of critical appraisal.<sup>14</sup> An alternative format is suggested by Combe et al<sup>23</sup> where the participants are given freedom to choice and present the article on the basis of certain criteria and the others are there to appraise the presentation and the paper.

### *Evidence Based Journal Clubs*

Evidence based medicine is the use of current best evidence in making patient care decision.<sup>24</sup> In an evidence based journal club the

participants truly tries to understand the usability of the evidences of the article to change the present practice. It focuses to the topic not on a single article. These clubs has got four key elements; question setting, literature searching, selecting the relevant articles and critical appraisal.<sup>8,14,21,25</sup> The common format practiced in most of the evidence based journal club is that runs in session cycles. The last 10 to 15 m of one session is spent to discuss, vote and select questions for the next session. Then a homework for literature search assigned to someone. The first 45 m of the next session is spent to appraise the most relevant literature found. There may be a 4 cycle format, where the final day is for the presentation of the appraisal, peer review, refinement and to make a single page summary called 'Critically Appraised Topic (CAT)'.<sup>10,13</sup> A reverse format is used in some hospital based journal club where the clinical question comes first then the suitable study design and other essential things are discussed to build up a framework to critically appraise the chosen articles.<sup>13,15</sup> In another model question formulation and search strategy is guided by the speaker's presentation on a clinical scenario. Then a CAT is generated after appraisal to make it available in the web page.<sup>26</sup>

### **Organizing Journal Clubs And Sessions<sup>1, 2,6-9, 12-17, 21, 30-39</sup>**

In any institute or working in groups first thing is to define aims and objectives to conduct the journal club. Then the purposes of the sessions should be delineated. The expectation from the presenter, percipients, and their responsibilities should be demarcated clearly. All concerned should work with a chief coordinator or program director.

#### *Steps to organize the club*

- Define the aims and an objective with the purposes to disseminate knowledge and to generate further questions. Goal is to improve certain skills.
- Decide the format and evaluation strategies (depends on who are the participants: unit based, discipline based, institute based or multidisciplinary. Also depends on the way to

operate; formal, informal, community of practice, on line etc.)

- Identify a program director to organize the process and facilitator(s) to conduct and time keeping in sessions; preferably with a good managerial quality and having sound knowledge in educational science.

- Prepare the participants - Copies of article can be supplied to all well ahead of the meeting or at the meeting few minutes before the presentation.

- Start with short brief on the basic things and meeting dynamics. Length of the meeting should be 30 -60 m.

#### Running the sessions

##### *Select a provocative article*

Recently published article, dealing with the problems commonly encountered

Original article should be first choice then meta-analysis or review maybe the last one

Correct method of the article and result challenging the existing practice or solving the controversies.

A pair of articles with opposite conclusions

Organization of the PowerPoint presentation should be impressive. It will be liked by the participants if the time is properly maintained.

Getting started - outline the topic, description of topic background not more than 3 m

Outline of a real or hypothetical case 2m

Presentation of the paper 10 m - do not just reiterate; make it understandable , Present the data with emphasis on major points, make it short and attractive

Presentation of the appraisal 10 m

Conclusion 5m

Reasonable time should be kept for discussion - board or the flip sheets can be used for making key points by the participants. Discuss on what the article mean not what it is saying.

Time keeping- If things are going fast involve more the participants and if more than half the time goes on discussing then ask

direct question for answer on a specific issue to a specific person or group.

Hold the journal club

*Encourage maximum attendance and make it interesting*

'Setting boundary'(strict start and ending)

'Pay for tea'; Provision of food

'Early week slots'

Notify everybody with topic, time, place, respective assignments.

Try to arrange structured and guided activities, encourage active participation.

Inspire the participants with a sense of humor

Respect and ensure a secured environment for everybody.

Evaluate the journal club activities to gather feedback and advices, for that standard review form or discussion checklist can be developed.

Schedule next meeting and identify topic or question for literature search.

In a systemic review it was identified that the use of a structured check list, explicit written learning objectives and a formal structure and process for the meeting are the 'best practices' in journal club.<sup>28,34</sup> Scientific paper presentation is not merely reiteration of the authors' conclusion; it is to clarify the authors meaning and also to judge its usability.

### **Guideline for Critiquing Research<sup>3,7</sup>**

In a simple word critique is careful objective study of strengths and limitations of anything; Journal club critique is the judgment to decide how much the result is worthy for practical purposes. Some common aspect can be used to guide the process. Usually to review and critique an article the journal and the author is appraised first. The next issue to look for is the research question and study design to answer it. Methods of selection of subjects, exposure or intervention, instruments used, all should be evaluated to appraise the reliability and validity.

Outcome variables, their measurements, statistical methods used, test of significances are elaborated to increase their comprehension. How the generalizability was increased and the bias and confounding were minimized are other important aspects of the critique. External validity should be assessed to judge the implications. Limitations, conflict of interest, and further steps to be taken are also important to discuss during critique.

### **Difficulties in Journal Club**

Journal clubs have got its limitations<sup>40</sup> and are not equally successful because of failure to maintain interest and continuity. Common causes are lack of time, lack of or ill-defined goals and objectives. Taylor and Warner<sup>41</sup> identified that lack of training on the process and orientation are other problems. Low attended of the juniors due to time pressure and less interest of the seniors are the major difficulties. To perform critical appraisal single handedly may be humiliated. Time pressure may lead to short cut. Sending articles before the club may have negative impact and results a waste of time and paper.<sup>9,13,14</sup> In case of evidence based journal club the selected paper may not be the most suitable for the topic under question. To overcome these problems one person having experience in the process can take the responsibility for basic and refreshers training on information technology, literature search and the basics of research methodology.<sup>42</sup>

### **Making the Journal Club Successful and Effective**

A successful journal club is said to be long existing (>2 years) and high attending (>50% of residents) program. It is effective in most of the time with a single leadership (program director), mandatory attendant (administrative incentives) and motivation (interesting and healthy environment).<sup>20</sup> It can be made fruitful if it is question or problem driven; appraisal focused and seeks to generate a written record (CAT). Focusing on the current real patient problem, bringing triggering question, a sense of humor and provision of good food, clear distribution of role and good signposting of

time, place and topic will encourage and motivate the participants to attend regularly. Everybody will be impressed and interested if copies of article to be discussed, the backup articles, readymade appraisal tools, a log of question asked and answered are kept ready for reference.<sup>4</sup> Use of structured format for review and critique on the literature will save the time and improves understanding of the process among the learners. Having a core group for regular attendance is essential to maintain continuity. One person who has interest in medical education should be responsible and a trainee or junior faculty may be the leader supported by the senior faculties. If the task is of recent interest and can match with the personal goal of the participants then they will be motivated to attend the club and think on the topic. Flexibility of the organizer and participants' innovative ideas can make it more attractive.<sup>4,12,16,27</sup>

Convenient time and place with administrative and financial support will lead the club to success. It should not be too frequent or irregular, regular and monthly meeting is well accepted and easier to follow by most of the participants. It was found that smaller residency program (<12), journal club independent of faculty, formal teaching in appraisal skill, and emphasis on original research were few factors associated with high attendance in residency journal club. All these will turn into an effective outcome if the journal club is finished with the groups' bottom line and any follow up actions (with tools, flowchart, audit, reading guides and further search etc).<sup>9,13,14,28,29</sup>

### **How to Improve Attendance**

To improve attendances providing food is most effective. Mandatory attendant can help but it might be seen as imposed rather than a scope for learning. Topic relevant to everyday work will generate interest. Good signposting of time, place and topic also can attract. Keep the time line momentum and track control. Enthusiastic support from the program director and educational diversity are the other ways to improve attendance.<sup>9,13,14</sup>

### **Other Uses of Journal Club**

#### *As a model for adult learning and training*

Journal club has been integrated into seventy to ninety five percent of residency programs, both in teaching and general hospitals.<sup>17</sup> Adult learning principles can be best exercised in journal club. This program can contribute to the development of a continual study habit among the participants. The goal of the journal club should be related to the learning task to the immediate work or long term goal. Presenting the objective in the form of actual situation or patient problem, use of problem solving or multiple teaching format, active learner involvement and use of frequent constructive feedback can convert the journal club to an effective program for adult learning.<sup>9,14, 37</sup>

#### *As a motivational tool*

Evidence based journal club not only can improve knowledge and critical appraisal skill but also can change attitude and behavior and thus improves health care outcome.<sup>42</sup> Early journal club practice may help and motivate the undergraduate students to practice evidence based medicine in future.<sup>43</sup>

#### *As an assessment tool*

Apart from the traditional use of the journal club, it can also be used for both teach and assess practice-based learning and improvement. Implementation of a journal club tool including the use of a structured review checklist, explicit written learning objectives, and a formalized meeting structure and process can be a means for assessment of competencies like practice-based learning which may be difficult to assess by other means.<sup>44</sup>

#### *Academic credit*

Residents' journal club can be taken for credit in their academic advancement as this may help them to improve their understanding and debating skill.<sup>5</sup>

#### *Evaluation of the Journal Club*

The process of evaluation is an integral part of any educational program.<sup>45</sup> It should reflect the effectiveness of the program and gather the

information to serve as a guideline for further development.<sup>46-49</sup> Overall satisfaction of the participants, their motivation and goal achievement need to be assessed using self-assessment checklist, questionnaire or pre-test post-test instrument.<sup>15</sup>

### Conclusion

Each and every institute should have defined journal club objectives for the development of students learning capability and also to develop and cultivate the skilled faculty. The practice of journal club can be adjusted and formatted according to the set goal of the organizing authority and the learning objectives of the participants. Depending on the adult learning principle always there is scope for innovation. Evaluation of the program and its individual segments will provide information for further improvement.

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