

# A Comparison of learning In Traditional and Evidence Based Journal Clubs

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## ABSTRACT

**Introduction:** Journal clubs are known as the teaching methods in most of the medical training centers. In journal club (JC) participants discuss about articles in recent medical papers and finally, written scientific results are accepted or rejected. The aim of this study was to compare the traditional and evidence based medicine (EBM) type of JCs. **Methods:** The present study was conducted in Imam Reza Hospital, Tabriz University of medical sciences from January to March 2010. Forty participants were enrolled in our study: 16 staggers, 11 interns and 13 internal medicine residents. We held 3 journal clubs with 14 participants in the first session and 13 participants in the other sessions. Journal club was held at the end of each week. The first paper was presented by one of the attending physicians of rheumatology ward. The second paper was presented by another attendant of rheumatology ward who was a member of EBM group of Tabriz University of Medical Sciences. Then the results were compared. **Results:** The comparison of the sums of participants' scores didn't show any meaningful difference between traditional and EBM journal club in topic, purpose, and methods & material part of papers, but in the results section of the papers, the difference was remarkable. **Conclusions:** Our study showed that in the EBM journal clubs, participants learnt more about the results part of the papers. but in the results section of the papers.

## Introduction

In journal club (JC) participants discuss about articles in recent medical papers and finally, written scientific results are accepted or rejected.<sup>1</sup> Journal clubs are known as the teaching methods in most of the medical training centers. Advantages of a journal club are: Helping people learn and improve their critical appraisal skills, Encouraging evidence based medicine, Promoting awareness of research skills, Keeping abreast with new literature, Encouraging the use of research, Promoting the social contact, Providing continuing medical Education, Stimulating debate, and improving the understanding of current topics.<sup>1</sup> It is an appropriate way to discuss about new and up to date researches. Journal clubs help medical students and teacher recognize better and more reliable medical literatures which are published recently.<sup>2,3</sup> They help students learn different research methods and analyzing of statistical and descriptive methods.<sup>4</sup> Evidence-based medicine (EBM) or evidence-based practice (EBP) aims to apply the best available evidence gained from the

scientific method to clinical decision making.<sup>5</sup> It seeks to assess the strength of evidence of the risks and benefits of treatments (including lack of treatment) and diagnostic tests.<sup>6</sup> Students mentioned that journal clubs could improve critical thinking and reading habits.<sup>7</sup> A survey of internal medicine chief residents in New York city revealed that the most common goal for journal club was to teach critical appraisal skills. Studies show that journal clubs develop better critical thinking and studying skills.<sup>7</sup> The review of an article in evidence based method has different steps: the introduction of the study: In this section audiences review the necessary information and context for a thoughtful and critical evaluation of the article's significance to describe the rationale and clinical relevance of the study question, and to highlight the preclinical and clinical research leading to the studied research.<sup>8</sup> Reviewing the articles referenced in the study "introduction" section is essential. It may also be helpful to discuss the data supporting the current research. Material and results of the study: Study population, including inclusion/exclusion criteria are also evaluated.<sup>5</sup> A diagrammatic schema is easy to construct

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using PowerPoint software and helps to clearly illustrate treatment arms in complex trials and finally discuss about them. Explaining the statistical methods is necessary because without suitable statistical method, studied article results may be misleading. Taking this opportunity to verbally and graphically highlighting of the key results from the study, with plans to expand on their significance later is one of the most important goal.<sup>6</sup> Speaking about discussion: Presenting the authors' conclusions and their perspective on the study results, including explanations of inconsistent or unexpected results is the next step. Consider whether the conclusions drawn are supported by the data presented is the final step of this type of JCs.<sup>9</sup> There is little information about the quality and quantity of learning among participants in the journal clubs. During the past decades traditional method was the unique way but we suggest evidence based method for journal clubs in the field of rheumatology. In this research, we compared these two methods. Also participants learning in the classic and evidence based journal clubs were compared.

### Materials and methods

The present study was conducted in Imam Reza Hospital, Tabriz University of medical sciences from January to March 2010. Forty participants were enrolled in our study: 16 staggers, 11 interns and 13 internal medicine residents. We held 3 journal clubs with 14 participants in the first session and 13 participants in the other sessions. The room was suitable for the group. Journal club was held at the end of each week. Two papers were presented in each session, the first one with traditional and the second with EBM method. We distributed handouts before presentation. The first paper was presented by one of the attending physicians of rheumatology ward. The second paper was presented by another attendant of rheumatology ward who was a member of EBM group of Tabriz University of Medical Sciences. In EBM presentation, participants were divided into small groups with 2-3 members. Each group studied one part of the paper and then critical appraisal was done on different parts of paper. We selected papers with similar topics for each journal club session. The first and third sessions papers were clinical trials and the papers of the second session were diagnostic study.

First and third session papers: "A randomized comparative study of the short term clinical and biological effects of intravenous pulse methylprednisolone and infliximab in patients with active rheumatoid arthritis despite methotrexate treatment"<sup>10</sup> and "Low dose prednisolone in addition to the initial disease modifying antirheumatic drug in patients with early active rheumatoid arthritis reduces joint destruction and increases the remission rate"<sup>11</sup> Second session papers: "Diagnostic and clinical value of anti-cyclic citrullinated peptide antibodies compared with rheumatoid factor isotypes in rheumatoid arthritis"<sup>12</sup> and "Diagnostic value of anti-cyclic citrullinated peptide antibodies in Greek patients with rheumatoid arthritis"<sup>13</sup>

After presentation of each paper, 10 multiple choice questions about the study topic and purpose, materials and method, and results which designed by a member of rheumatology research team, who was blind to the type of presentations, were given to participants. Papers presenters were also blind to the questions. Participants should have to answer the questions in 5 minutes. The maximum score for each part was 1. The scores of participants in both forms of presentations were calculated and compared.

### Results

After presenting of articles in traditional and evidence based methods, the knowledge of participants in different fields (topics and purpose, material and methods, and results) were compared. The comparison of the sums of participants scores didn't show any meaningful difference between traditional and EBM journal club in topic and purpose, and methods & material part of papers, but in the results part of papers the difference was remarkable (table 1).

**Table 1. The comparison of the scores of participants in the traditional and EBM journal club**

Methods of presentation	Topic and purpose	Methods & materials	Results	Total
Traditional	0.98±0.16	0.66±0.19	0.31±0.42	0.63±0.17
EBM*	0.98±0.16	0.658±0.20	0.57±0.26	0.67±0.14
P value	P<0.1	P<0.847	P<0.006	P<0.252

\*Evidenced based medicine

### Discussion

Critical appraisal is mainstay part of evidence based journal clubs.<sup>1</sup> So we focused on it in our JCs. Kitchens et al in a study on 89 internal medicine residents showed that critical appraisal teaching has minimal effect on learning of students in residency course,<sup>14</sup> however, except this one, we could not found any other trials.

Several resources are available to help you select important and timely research, including the American College of Physicians (ACP) Journal Club.<sup>15</sup>

McMaster University has created the McMaster Online Rating of Evidence (MORE) system to identify the highest-quality published research. In fact, the ACP Journal Club uses the MORE system to select their articles.<sup>16</sup>

Specific inclusion criteria have been delineated in order to distinguish papers with the highest scientific merit. Articles that have passed this screening are then rated by clinicians on their clinical relevance and newsworthiness, using a graded scale.<sup>17</sup>

With the help of your mentors and colleagues, you can use these criteria and the rating scale as informal guidelines to ensure that your chosen article merits presentation. In our model of JCs also discussion about results was more effective and it was comparable with above mentioned methods.

It is essential that we define the success of our journal club. A useful and widely accepted approach to this analysis has been published in JAMA's series "User's guide to the

medical literature".<sup>16</sup>

The Centre for Health Evidence in Canada has made the complete full-text set of these user's guides available online. This site offers review guidelines for a menu of article types, and it is an excellent, comprehensive resource to focus your study critique. A practical, user-friendly approach to literature evaluation that includes a worksheet is also available on the ASH Web site for your use. Defying of our JC using EBM method was also comparable with these methods in results section.<sup>18</sup> Many academic training programmers include a journal club. They have long been recognized as a means of keeping up to date with the literature; promoting evidence based medicine. Journal clubs also help keep permanent staff updated.<sup>19</sup> Presenting and reviewing of an article with EBM method was also useful for medical training. Journal clubs can be stimulating and entertaining, but they will only continue to be interesting if they respond to the needs of participants. Although there is no ideal format, the common themes for successful journal clubs seem to be that they are question driven and appraisal focused. They need to be well structured yet flexible and creative within the limitations of a traditional format. EBM method of JC solves many of these limitations.<sup>9</sup>

Journal club is a group of individuals who meet regularly to critically evaluate recent articles in scientific literature. Journal clubs are usually organized around a defined subject in basic or applied research. For example, the application of evidence-based medicine to some area of medical practice can be facilitated by a journal club<sup>9</sup> so we chose this type of JCs. 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. Even if 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.<sup>20</sup>

In EBM type of a JC, we can also speak about results correctly.

As an entity, journal clubs have a long history in postgraduate medical education which is well documented by Linzer.<sup>21</sup> The earliest reference to a journal club is found in a book of memoirs and letters by the late Sir James Paget<sup>22</sup>, a British surgeon and one of the founders of modern pathology. He describes a group at St. Bartholomew's Hospital in London in the mid-1800s with 'a kind of club ... a smallroom over a baker's shop near the Hospital-gate where we could sit and read the journals.' It is believed that Sir William Osler established the first formal journal club at McGill University in Montreal in 1875, though Osler himself might have been aware of similar gatherings that were taking place elsewhere.<sup>23</sup> The purpose of Osler's early journal club was 'for the purchase and distribution of periodicals to which he could ill afford to subscribe. It must be emphasized that in recent JCs, nowadays, the purpose is selecting the appropriate papers with better results which is distinguishable in our EBM JCs. Journal clubs are sometimes used in the education of

graduate or professional students.<sup>1</sup> These help make the student become more familiar with the advanced literature in their new field of study. In addition, these journal clubs help improve the students' skills of understanding and debating current topics of active interest in their field. This type of journal club may sometimes be taken for credit. Research laboratories may also organize journal clubs for all researchers in the lab to help them keep up with the literature produced by others who work in their field. We also used EBM JCs for this purpose and our study revealed that it was successful in main part of the article (results). Evidence-based individual decision (EBID) making is evidence-based medicine as practiced by the individual health care provider. There is concern that current evidence-based medicine focuses excessively on EBID.<sup>16</sup> Thereby we must change all aspect of medical training to EBM method and JCs are not an exception regarding that Tabriz University of Medical Sciences is one of the pioneers in the field of EBM in Iran.

## Conclusion

Our study showed that in the EBM journal clubs, participants learnt more about the results part of the papers. However, we need another study with more participants and presentation of other types of research papers like papers about prognostic studies. Also, it seems that better results may be achieved in the centers where corner stone of medical education is EBM method.

## Ethical issues

Participants' information was kept confidential.

## Conflict of interest

No competing interests to be declared.

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