

## Experiences of a journal club organized by students: A proposal for an evidence-based medicine format

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### To the editor,

Journal clubs are defined as group discussions and critical evaluations of articles. They can build the link between clinical practice and research data [1]. The three main objectives of a journal club are keeping up with the advances in the literature, learning and applying evidence-based medicine and discussing the clinical relevance of research data [2,3].

There are significant data on postgraduate journal clubs, however, there is sparse information on undergraduate journal clubs. Two papers have focused on undergraduate journal clubs: one used the critique of articles as a method to teach anatomy [4] and the other used dialectical notes to increase student discussion and understanding of the literature of molecular biology [5].

McDonough described undergraduate journal clubs as “an excellent way to introduce students to primary literature, to develop their abilities in critical thinking and to practice interpreting experimental data” [5]. Since most of the published data were about postgraduate journal clubs, deriving a format for an undergraduate journal club poses a difficulty.

A Student Scientific Research Club (SSRC) was founded in 2011, and has been an active journal club for 4 years at Marmara Medical School. After having four years of

experience, in 2015, SSRC decided to have a meeting to discuss its own strong and weak points. A total of 24 people participated in the meeting.

The first part of the meeting was planned to audit the strong and weak sides of the SSRC’s current journal club. Authors presented papers from the literature to discuss the aims and the format of the journal clubs generally. SSRC’s journal club had both undergraduates and faculty staff as presenters at the meeting. The topic of the journal club was chosen by the presenters. Presentations included original research (the speaker’s work and that of others), reviews, case reports and personal experiences. Participants were asked to point out at least one strong and one weak point of the current format of SSRC’s journal club. Positive points that were mentioned included increased literature reading, improved presentations and the value of peer education. However, presentations of poorly selected papers, lack of expertise in the field, lack of critical appraisal skills and inappropriate or weak discussion were negative points.

In the second part of the meeting, the aims and learning objectives of the current and of an “ideal” undergraduate journal club were discussed. Participants discussed and defined the current aims of the journal club to be: sharing new information, increasing scientific curiosity, as well as learning presentation skills by peer education. When asked about the ideal purposes of an undergraduate journal club, participants also added to the current aims: learning critical appraisal skills, advancing scientific thinking by discussing research questions and hypotheses and learning how to write a paper.

The third part of the meeting served as a synthesis of the first and second parts: a discussion for an ideal undergraduate format took place. Every participant discussed the applicability, probable positive and negative sides of the ideal format.

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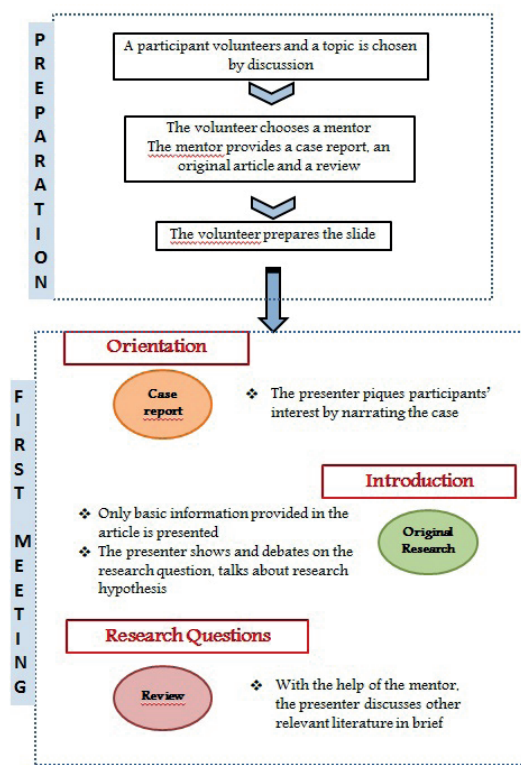
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### The ideal format for an undergraduate journal club

The ideal format for an undergraduate journal club can be treated as 4 steps. The first step is “Preparation” which includes choosing a topic and learning how to prepare a slideshow along with helpful comments from a mentor. A volunteer picks a topic to present at the next meeting. The future participants discuss the relevance, novelty and applicability of the topic. If the proposal is accepted, the volunteer gives a letter of intent to the mentor who should be a specialist on the topic of the subject chosen. The letter includes the aims of the journal club and its format. The mentor is required to provide three different types of papers: a case report, an original research article and a review. The mentor is also required to be present at the meetings. This step aims to teach how to choose appropriate papers and how to prepare a presentation for a meeting (Figure 1).



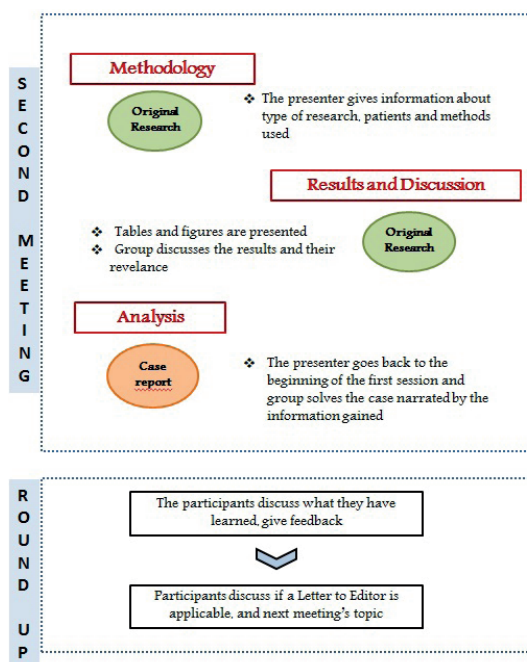
**Figure 1.** Preparation and First Meeting. This part presents the Preparation phase including choosing a topic, a mentor and preparing the slideshow and the First Meeting which aims to teach how to ask scientific questions.

The second and third steps are two meetings, each with separate aims. Each meeting is expected to be sixty minutes, not longer. The two meetings are recommended not to be more than a week apart. At the beginning of each meeting,

a participant is chosen to take notes of the presentation and the discussion.

This second step, “First Meeting”, starts with the case, to stimulate interest and orient participants to the topic. Presentation goes on with the original research. Mentor replies to any questions arise during the introduction. At the end of the introduction, the research question is presented on one slide, a discussion takes place about possible research questions. The presenter goes on with the review, providing the audience with the information to answer questions that arose in the previous discussion. The learning objectives of the second step are to increase scientific curiosity, to stimulate scientific thinking, to learn how to ask research questions and how to build hypotheses (Figure 1).

The third step, “Second Meeting”, starts with a presentation and discussion of the methods of the original research. If the participants lack any knowledge that may impair discussion, the mentor provides enough information for the discussion to continue. An evidence-based approach is used to evaluate methodology, results and discussion. Results are preferably discussed on the basis of tables and figures rather than text. Finally, the presenter goes back to the case report, presents the case along with the new information. The third step focuses on reading skills, critical appraisal of papers, evidence-based medicine approach and different types of methodologies and their uses (Figure 2).



**Figure 2.** Second Meeting and Round up. This part presents aims to teach how to discuss methodology, results and discussion and during Round up phase participants discuss what they have learned.

The fourth step, “Round up” consists of participants discussing what they have learned. A feedback is given to both the mentor and the presenter. The attendees also discuss the possibility of writing a Letter to Editor, describing what they have discussed. As pointed out by literature [6], writing a response or a Letter to Editor to recent papers increases focus. If not applicable, the presenter is expected to write a summary on the topic to the SSRC’s journal. The topic of the next meeting is also proposed and discussed (Figure 2).

### **Applicability, probable positive and negative sides of the ideal format**

McDonough described that some students acquired “dog-eared” copies of the papers presented at the journal club, causing a reduction in discussion, lack of background knowledge and hesitancy to speak out [5]. Since SSRC’s current and proposed programs are student-organized, having dog-eared copies or hesitancy to speak out do not pose major difficulties. We believe that the opportunity of peer education also reduces the probability that participants will be passive.

Havet et al. discuss that the lack of knowledge arouses curiosity and stimulates participants to a self-working method [4]. However, we believe lack of knowledge rather impairs discussion, our proposed format tries to eliminate lack of knowledge by using different types of papers and having a mentor present at the meetings.

There are several limitations to our proposed model. First of all, a participant is expected to attend both meetings. This may be problematic since the meetings need to be organized to suit participants’ and mentor’s free time. Secondly, the mentor should be thoroughly informed of the model, this may be time consuming for the mentor. Third and last, basic

sciences may not fit this model as well as clinical sciences. On those occasions, the authors believe that this model’s aims and format may both be modified.

We believe the aims of undergraduate journal club should be, increasing scientific curiosity and critical thinking, learning to discuss methodology and results using evidence-based medicine methods, discussing the research questions and learning how to ask questions. The paper proposes a journal club organized by undergraduate students to discuss articles in medical journals dealing with medical issues on the basis of evidence. Being a doctor requires keeping up with the literature and its applications to clinical practice. Undergraduate journal clubs should be acknowledged and their aims and format should be further discussed.

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