

# **Creating a Virtual Nursing Journal Club: An Innovative Teaching Method to Achieve Evidence-Based Practice in Healthcare**

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## **ABSTRACT**

Nursing practice is increasingly focusing on delivering care based on empirical evidence or research findings. As primary providers of direct patient care, nurses and nursing students need to use current knowledge to meet this evidence-based nursing demands. Achieving this issue is challenging because nurses and nursing students may not have the knowledge and skills to interpret and critically appraise scientific literature. Traditional face to face journal club formats, founded by Sir William Osler in 1875, have been used as teaching method in health care to share new knowledge, to discuss current research findings in relation to clinical practice and to improve reading and appraising skills. This format is typically based on a presentation session followed by a group discussion. Limitations of such formats include lack of interest, time or research expertise. To overcome some of these barriers, virtual journal club (VJC) formats have been developed using social media, intranet, e-mail or learning platforms to discuss in synchronous and asynchronous ways. By combining the two concepts of online learning and VJC, we have been creating an opportunity for nurses and nursing students to learn collaboratively while discussing evidence-based practice knowledge at a time and place of convenience. Using the example of the learning platform Moodle, this article provides general suggestions for people who are interested in creating and organizing their own VJC.

**Keywords:** virtual journal club, online journal club, e-journal club, evidence-based nursing, nursing education

## **1. INTRODUCTION**

Nurses and nursing students have to make clinical decisions in patient care on a daily basis. These decisions should lead to the best possible outcome for the patient [1]. In order to achieve this, more than one's own clinical experience is necessary. Evidence-based nursing combines clinical experience (internal evidence), best evidence from research findings (external evidence), patient preferences and available resources [2]. Ingersoll has expressed this more concretely with the following definition:

„Evidence based nursing practice is the conscientious, explicit and judicious use of theory-derived, research-based information in making decisions about care delivery to individuals or groups of patients and in consideration of individual needs and preferences” [3].

The rapidly changing health care environment in general and new developments in nursing care in particular requires that nursing practice focuses on delivering care based on empirical evidence. As primary providers of direct patient care, nurses and nursing students need to apply current research findings to meet this evidence-based nursing demands [4]. In the era of a veritable explosion of information it is anything but easy to stay up to date with the newest findings in even a single discipline [5]. To keep abreast of the millions of biomedical articles published annually and a half-life of 5 years for scientific knowledge, healthcare professionals would have to read many articles every day in order to meet this requirement only rudimentarily [6]. Apart from this impossible task, lack of time, lack of access to scientific journals and lack of expertise in reading, interpreting and critically appraising the literature are major barriers to keeping up with current proceedings in the field [7]. Journal clubs have been used as teaching method to overcome these barriers [8]. They are designed to share new knowledge in health care, to discuss current research findings in relation to clinical practice and to improve reading and appraising skills [9].

## 1.1 Journal Clubs

A journal club can be defined as a group of individuals who meet regularly to discuss critically the clinical applicability of research findings from the current healthcare literature [10]. Mattila et al. defined nursing journal clubs as:

“[...] meetings where nursing staff convene to discuss the use of research knowledge in clinical nursing practice based on a study presented to them” [11].

Since 1875, when Sir William Osler organized the first journal club at the McGill University in Canada, this method is having a long tradition in healthcare education and research [10]. So far, two systematic reviews and one non-systematic literature review have been conducted on the impact and benefits of journal clubs, including studies from 1995 to 2013 [12] [13] [14]. The integrative review by Rogers included 10 studies in the field of nursing science, the systematic review by Honey and Baker comprised 16 multidisciplinary studies in different fields of healthcare and the literature review by Lachance involved 20 peer-reviewed articles mainly among nursing students. All three reviews indicated that journal clubs improved the participants' familiarization with scientific papers and skills connected to reading and assessing related information and that journal clubs promoted the dissemination of research findings [12] [13] [14]. Furthermore, journal clubs were found as an effective teaching method for healthcare professionals in several ways, namely by:

- updating the professional knowledge,
- promoting critical thinking,
- improving critical appraisal skills through assessing the validity and applicability of the scientific literature,
- increasing the use of literature in clinical practice and
- influencing changes in daily practice [12] [13] [14].

In addition, the reviews reported that journal clubs also promoted professional growth through in-depth intra- and interprofessional collaboration. The authors concluded that journal clubs have been proven to be effective both as part of a study curriculum and when implemented into clinical practice of healthcare professionals [12] [13] [14].

In a traditional face to face journal club format individuals physically meet to present and discuss a paper of interest. This kind of journal club format has, however, significant limitations [11]. For nurses it is often difficult to find a day and time that are convenient. This becomes even more difficult for participants from different nursing settings, different shift systems and workflows [15]. In addition, journal clubs are often offered for an entire institution and a broader audience, which often leads to a lack of interest in the articles being discussed. This usually ends with a lack of active participation in the journal club [16]. Finally, members of a journal club may not be competent in all aspects of reading, interpreting and critically appraising of research literature. Numerous authors argued for example that staff nurses have difficulties interpreting research papers since a complex, scientific and statistical language is often used [7] [15] [17] [18]. Furthermore it can be stated, that in spite of the long tradition of journal clubs, in many countries journal clubs are not very widespread. Reasons are seen in the fact that many institutions do not have the staff with the necessary knowledge and skills to manage and run a journal club [19].

## 1.2 Virtual Journal Clubs

To minimize the limitations and to optimize the benefits of journal clubs, new formats like the virtual journal club (VJC) have been developed. With the advantage of modern digital technologies, VJCs are growing in number and offer many opportunities for continuing healthcare education [20] [21] [22]. Online learning provides an innovative approach for self-directed education through interactivity, with broader participation leading to better discussions and better transfer of current knowledge [23].

In an online journal club, participation is virtual and can be synchronous or asynchronous. Virtuality offers a solution to timely restricted and geographically isolated nurse practitioners [4]. The VJC is also not limited to a single institution, but offers a broader participation for nurse practitioners, nurse students as well as nursing specialists and nursing scientists [23]. This might lead to more critical thoughts from different perspectives and promotes intra- and interdisciplinary exchange. Lack of time is a major barrier in journal club participation but the option to organize synchronous (e.g.: chat, tweet, videoconference), asynchronous (e.g.: blog) or both discussions helps to overcome this limitation [4]. All kind of chats, videoconferences or blogs can realize the participation of healthcare professionals in discussions anytime and anywhere when internet access is available [23] [24].

E-learning platforms are well suited for the technical implementation of such virtual offers. In the field of nursing, research evidence shows that the current generation of nursing students and staff nurses are unenthusiastic if educational programs follow only traditional teacher-centered learning activities [25]. This lack of motivation leaves educators distraught with the task of keeping nursing students and staff nurses interested in life-long-learning. E-Learning platforms offer several advantages like being more learner-friendly, promoting time- and location-independent learning, supporting the collaborative nature of learning and motivating nurse students and staff nurses to exchange their clinical experiences [25] [26].

Moodle (modular object-oriented dynamic learning environment) is a widely used and freely accessible open-source platform with numerous features that higher education and health institutions can adapt to their needs [25]. Especially for VJC, Moodle allows to use learning videos or webinars as tutorial modules on what a VJC is, how it works and what needs to be considered when critically reading and appraising research articles [4]. In platforms like Moodle, journal club sessions can be organized synchronous (e.g.: chat, videoconference), asynchronous (e.g.: forum) or both. Synchronous activities such as chats and live video conferences have the advantage of a location-independent live discussion between the participants. The disadvantage of these activities is that they are bound to a certain time. Asynchronous activities such as blogs and forums can be implemented independent of time and place. The creation of synchronous or asynchronous VJCs will serve to develop a network of nurse practitioners seeking to improve daily care through evidence-based nursing, without geographical barriers. Thus, it can be a forum where nurses and nurse students can meet “virtually”, share their experiences and learn from current best evidence in nursing. VJC members may critically appraise, evaluate and discuss research findings with regard what they currently do, hence improving the overall quality of care [13] [27].

Therefore, the aim of this article is to provide general suggestions regarding the creation and organization of a VJC using the example of the e-learning platform Moodle.

## **2. CREATING A VIRTUAL JOURNAL CLUB STEP BY STEP**

Key steps regarding the setup before starting the VJC [21] [22] [24]:

- (1) build the core team
- (2) set up the technology platform
- (3) develop sections and content
- (4) run a pilot-test and
- (5) evaluate the VJC.

### **2.1 Build the core team**

Some core team members are needed to host a VJC. An individual or a group of people who are interested in organizing the VJC should assume the role of primary facilitators. These individuals are important to initiate the first steps, set the goals of the journal club, and manage the main site and possible subsections. It is advisable to have different people with different competences in this primary team. For example, a nursing scientist who has competence in critical reading and appraising of research articles and an expert for digital media who supports the technical implementation [20] [28].

Secondary, facilitators are essential to manage the subsections, prepare the journal clubs and moderate the discussions. Each of the subsections or groups should have a moderator who manages the membership and identifies topics in clinical practice. In this context the moderator:

- reflects and searches appropriate research paper
- formulates guiding questions for the discussion
- implements rules for the discussions
- leads each journal club session [24].

## 2.2 Set up the technology platform

The best way to build a VJC in the learning platform Moodle is to create a new course. Alternatively, the creation of a server site is required. Figure 1 illustrates the suggested components of the Moodle course or site. At a minimum, the VJC site should have sections or menu tabs for “welcome”, “before you start”, “tutorials” and thematic sections such as geriatric nursing, surgical or intensive care.

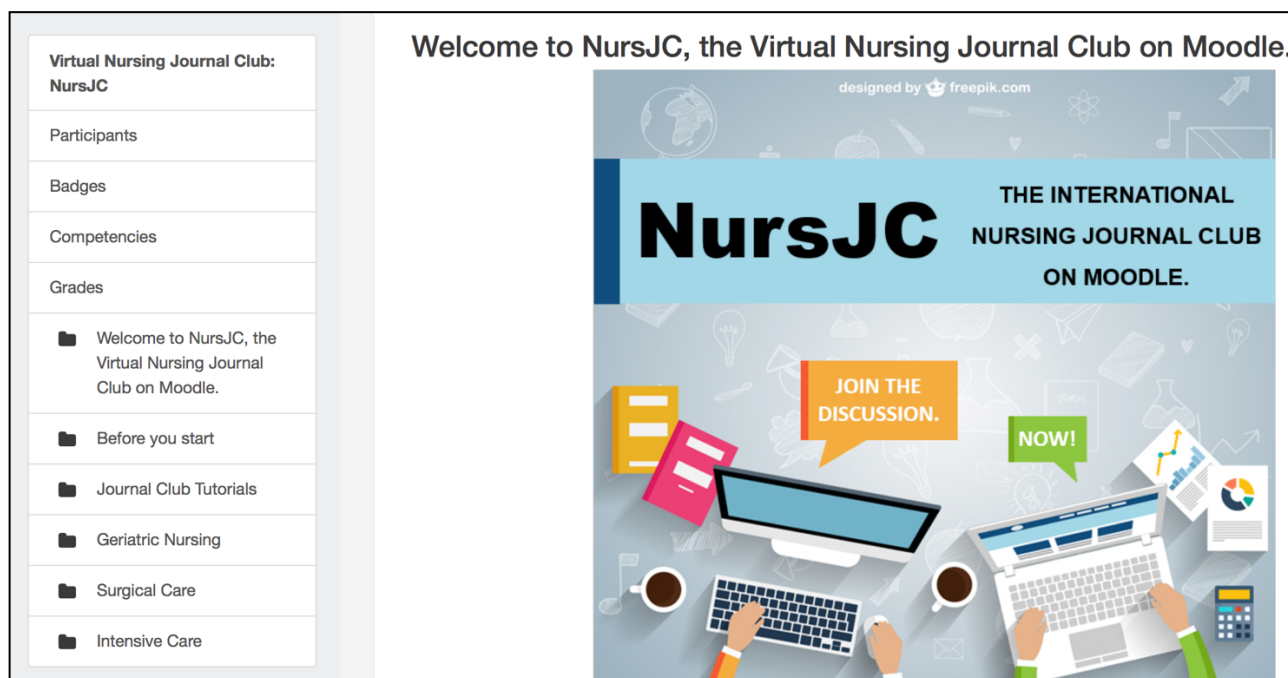


Figure 1. Possible setup of a virtual journal club in the learning platform Moodle.

## 2.3 Develop sections and content in the context of Evidence Based Nursing

Once the course site or website has been developed, each section needs to be filled with the contents. The “before you start” or “welcome” page should outline a definition as well as the aims of the VJC and describe how to become a member of a specific “club”. The “journal club tutorials” page should present a collection of resources that will help members to start participating in the discussions. They should provide basic knowledge regarding:

- nursing science
- evidence-based nursing
- reading scientific papers
- critically appraising research articles.

Furthermore, it is important to state the rules and parameters for participating in the discussions and posting comments [20] [24]. These tutorial resources may come as learning videos, handbooks, podcast recordings, glossary, wikis or simply power point slides. It is essential to create short tutorials, highlight the key points, present practical examples and provide adequate graphics that will stimulate the interest of (future) participants. Quiz questions can be built in to repeat and deepen the basic knowledge.

The different subsections or “clubs” might be formed on the basis of similar clinical interests, similar specialty or any other way participants wish to be grouped. In the case of nurse practitioners or nurse students it is useful to group similar specialties like “intensive care”, “diabetes care” or “cardiac care”. In this way, the members experience the same challenges in daily practice and can share and discuss them. The specific club page should include the contact details of the section moderator, a general discussion board for different topics and an overview of the sessions [29].

In addition, it could be interesting to add a choice activity in Moodle to ask a single question and offer a selection of possible responses. So, the moderator can identify the members' interests for the next journal club session. It is also possible to generate an archive for each club. This allows specific journal club members to store previous discussions and refer back whenever necessary. Figure 2 shows as example the different activities in our "intensive care club".

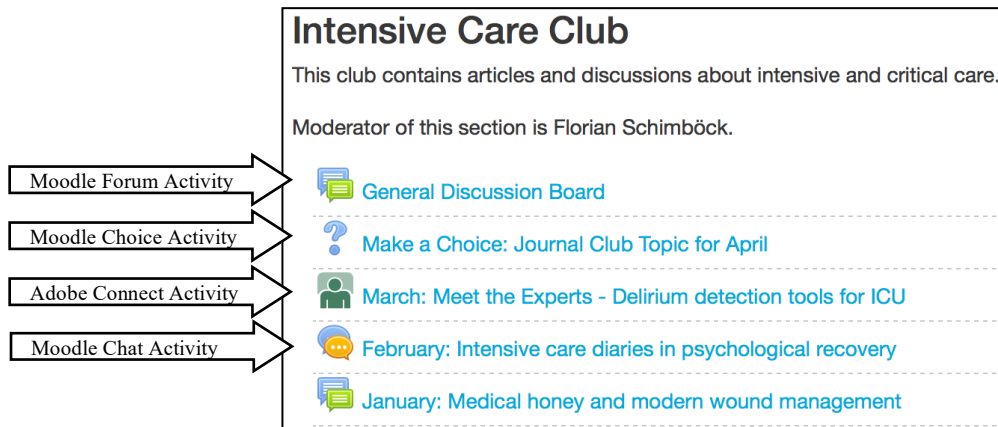


Figure 2. Example of a specific journal club group with different activities.

## 2.4 Run a pilot-test

When the basic contents and at least one club site are ready, it is advisable to run a general pilot test for the technological implementation, the tutorials and the procedure of the journal club session itself. The moderator of the club section has to setup the monthly journal clubs. A possible approach for moderators to prepare and implement synchronous or asynchronous VJC sessions is shown in table 1. The steps of preparation, promotion and evaluation are largely identical. Only the launching of the journal club is different.

Table 1. Steps to build a synchronous or asynchronous journal club session.

Synchronous session via chat or videoconference	Asynchronous session via forum or blog
<p><i>Step 1. Preparation</i> (3-4 weeks before launch): Identify a topic which reflects a current issue in clinical nursing practice and search for an appropriate research paper. Read and critically appraise the paper using a critical appraisal tool with defined questions. Then, formulate 3-5 questions to guide the discussion. For example:</p> <ul style="list-style-type: none"> <li>What are the implications for nursing practice?</li> <li>How might these results influence your clinical decision making?</li> <li>If you were to summarize this paper for a colleague, what are the 3 major lessons learned from this paper?</li> </ul>	
<p><i>Step 2. Promotion</i> (1 week before launch): Inform the members of the club about the upcoming journal club event (date and time when it starts), send the chosen paper and the questions of the critical appraisal tool if used.</p>	
<p><i>Step 3. Launch the VJC</i> (60-minute period): Start the live-chat or videoconference, welcome the participants and let the participants introduce themselves in a few sentences. Then introduce the chosen paper and disseminate the formulated discussion questions and/or questions from the critical appraisal tool. Use intervals from 5 to 10 minutes depending on the number of questions and the ongoing discussion. At the end, summarize the key points of the</p>	<p><i>Step 3. Launch the VJC</i> (2-7-day period): Activate the forum or blog. Introduce the chosen paper in a few words and disseminate the formulated discussion questions. Like in any forum, the discussion might run off track; so check the forum regularly, direct with new questions or call for consensus when required. When the time is up, summarize the key messages of the discussion and publish them at the end of the forum to close it appropriately. This makes it</p>

discussion and publish them in a separate document for those who missed the live-session.	easier to follow for those who didn't participate the discussion. Further formulation of "take-home-messages" promotes memory of the study.
<i>Step 4. Evaluate the session and/or make a choice</i> (2 days after launch): Activate a short evaluation questionnaire and/or a choice activity after the journal club session to identify a topic of interest for the next session.	

## 2.5 Evaluate the virtual journal club

Conducting an evaluation and gathering feedback from the participants may provide useful information for improving future journal club sessions. In this context different strategies are recommended.

A quantitative evaluation in form of a survey questionnaire can be easily activated in Moodle. The feedback module enables the primary and secondary facilitators to create custom surveys with different answer types. Regular evaluations every six months should be organized to analyze the two key areas process and outcome [20] [24].

The process evaluation is focusing on whether the VJC procedure is functioning as it is intended. It addresses the structure, the preparation and the realization of synchronous and asynchronous activities. This feedback is essential to improve the single activities and to ensure a good participation rate for the long term [4].

In addition, evaluation allows to get an insight on changes in attitude, knowledge and skills of nurse practitioners and nurse students to evidence-based nursing, research methods, reading habits, critical appraisal or critically thinking. These outcomes are important to explore the impact of VJCs as teaching method [13].

## 3. CONCLUSION

In summary, the delivery of a VJC using a learning platform like Moodle is simple, educationally valuable and offers a number of advantages in contrast to traditional face-to-face journal clubs [11] [13]. VJCs can easily be replicated across all nursing specialties and they provide opportunities for asynchronous activities which means that each member can participate at a time and venue of convenience [29]. Establishing the core team, formulating the aims of the VJC, creating a Moodle course and populating it with content, will set the basic conditions for member participation. The moderators play a key role in facilitating the sessions as they are primarily responsible for preparing, promoting, launching and evaluating the VJCs. Possible barriers to participation such as lack of knowledge about evidence-based practice and critically appraising scientific literature are likely to be overcome with the availability of appropriate tutorials [7]. In the context of evidence-based practice, this method is a valuable format for professional development and is not only applicable to the nursing profession but also to all kind of healthcare professionals [30].

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