Journal Clubs as Teaching Tools for Geriatric Medicine: An Investigative Study

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Abstract
Evidence has accumulated in support of the role of Journal Clubs (JC) as an effective educational tool especially in promoting critical appraisal skills, and improving knowledge of epidemiology and biostatistics. However, the educational underpinnings that inform the process and explain how learning occurs within the context of JCs have not been investigated.

We conducted a qualitative study among the members of the geriatric JC to better understand the process of learning in a JC setting. We employed a two-step methodology starting with a nominal group technique and followed by one to one semi-structured interviews. The members of the JC were in various stages of their medical training, as well as attending physicians (consultants).

This study confirms that the JC in geriatrics provides significant learning through its unique style. The JC may be envisaged as a community of practice offering learning experience even for senior physicians. The learning that occurs is enhanced by relating the content to real life clinical cases and through promoting group interaction, discussion and dialogue. The attending physicians added to the learning process by helping to link pieces of information together and demonstrating its relevance to clinical practice.

Keywords
Teaching tools, journal clubs, experimental geriatrics/gerontology, investigative study

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Introduction
The journal club (JC) has been in practice for nearly 200 years. Throughout this time, it has evolved and adapted to the educational and training needs and is now a well-endorsed practice in many hospitals and postgraduate departments. Despite its wide practice, the educational underpinnings that inform the process or explain how learning occurs within the context of JCs have not been investigated.

Most of the evidence base for the role of JC as an effective educational platform has involved experimental settings researching, through quantitative studies, the type of knowledge and information gained during the process. However, the methodology used has provided little insight on the learning process that takes place. Such information is best acquired through qualitative research, which can provide more in-depth information that may be difficult to convey quantitatively (Strauss & Corbin, 1990).

We undertook a study employing a qualitative approach to better understand the process of learning in a JC setting of the Department of Geriatrics in a district general hospital.

Method
The methodology comprised two stages. The first involved a group approach to explore the process of learning that takes place in the JC employing a nominal group technique (NGT), followed by one to one semi-structured interviews over an 8-week period.

Participants were members of the JC of the geriatrics department consisting of final year medical students, trainees at different grades, and attending physicians. They were informed of the purpose of the research study as well as the structure and format of how the project is conducted. It was made clear that the information they provide will be confidential and any controversial personal views will remain anonymous. A verbal consent was obtained before starting.
The NGT has been validated for use in medical education studies (Bikmoradi, Brommels, Shoghlí, Sohrabí, & Masiello, 2008; Castiglia, Shewchuk, Willett, Heudebert, & Centor, 2008; Gallagher, Haers, Spencer, Bradshaw, & Webb, 1993; Grant, Berlin, & Freeman, 2003; Jones & Hunter, 1995; Lancaster, Hart, & Gardner, 2002; Lloyd-Jones, Fowell, & Bligh, 1999; Thomas, 1983). In essence, NGT is a structured approach to collect data and generate information that can be graded through group discussion. While the data collection is viewed as a group activity, the emphasis is on individual effort. The interaction and discussion is used only for the purpose of clarification. The process is effective and the information generated comprises the researcher’s core set of information (Delbecq & Van de Ven, 1971; Jones & Hunter, 1995).

During the NGT session, the purpose of the meeting was clearly explained and the process was described in detail to the participants in attendance. Issues regarding confidentiality were also elaborated on. A rough interview guide and semi-structured questionnaire were produced beforehand, based largely on the results of the NGT conducted earlier by the investigator. The intention was to allow interviewees to express their perceptions on a range of issues relating to the JC meetings they were participating in, with an emphasis on how learning, as they perceived it, was enhanced and facilitated each from his or her perspective. For the NGT, the question asked was “How is learning facilitated in the JC?” Each interview was recorded and later transcribed. Analysis of the data was done manually. Themes and categories were identified in the first instance, and subsequently grouped together. The author was the sole investigator who facilitated the NGT and conducted the interviews.

Results

The number of participants in the NGT activity was 17: three final year medical students, five foundation year trainees (postgraduates, PG Years 1 and 2), five core medical trainees (PG Years 3 and 4), two fellows, and two consultants (attending physicians).

Of those participating in the NGT, 10 were selected to participate in one-to-one interviews.

The group generated 27 items which they felt contributed to the learning that takes place in a JC setting. During the clarification/discussion phase, two of the items were identified as duplicates and combined. Several other items were thought to be similar, but following clarification, the group felt that there were sufficient differences to justify keeping them as separate items. The results including scores and ranking are detailed in Table 1.

The five highest scoring points were in the following order:

1. Doing the presentation
2. Relevance of the topic to current clinical practice
3. Listening to the debate between the consultants
4. Informal discussion and debate that takes place among peers/participating and listening
5. Having a visual presentation, displaying the facts through bullet points and clear graphics

In the interviews, the participants reflecting on their own experience found the JC useful and educational although each trainee had a different perspective. The two attending physicians also felt that JC offered them good learning experience even though their learning needs differed from those of the trainees. Several themes were identified and grouped together.

The Learning Environment

The trainees viewed the experience not only from an educational point of view but also from a social aspect and knowing each other:

It is an opportunity for the geriatric department to meet and get to know each other because one can feel isolated at times. I think there is a social element there.

A PG1 trainee explained that once they came to know each other, a relationship formed between the group members. She felt that in addition to the learning and knowledge acquisition that the meeting offered, she would attend the JC to support her colleagues who are presenting because she realized the effort they had put into the preparation.

This sense of belonging and supportive fellowship reflects the new approach to learning—a community of practice.

Another junior trainee felt that the JC meeting was time out of their busy daily work, away from the ward and their patients, where they could step back and think. For the juniors, the JC appears to come as a package—a short break from ward work, and an opportunity to learn and gain knowledge. For them, the learning here is different from learning through ward work; it is knowledge with practical implications and that is what made the JC useful in their view.

The trainees commented that the informal way the JC was conducted helped them to learn. They felt that because it is an informal atmosphere, individuals find it easier to ask questions or make comments especially if encouraged to do so.

I think for me it helps a lot, firstly because in pressurized environment . . . we all know the physiology, we know that adrenaline and cortisol shuts off other dimensions of your thoughts, and so I find having a non-threatening atmosphere really helps for that sort of slow winding processes that are involved in learning.

The Learning Process

Although there was a consensus that learning did actually occur, some difference in opinion existed on the
amount of learning that took place and how it occurred. One of the fellows felt that the degree of learning varied and was dependent on the seniority:

The very junior trainees get an idea of the paper presented although they may not have the background knowledge so they learn a fact or two, but they will learn a bit more about papers and from the discussions about how to critique and how to arrive at a conclusion.

Another trainee (PG3) maintained a more long term but similar view on learning from JCs:

Learning is about understanding and it comes in stages... first time round you might only get exposed to it. You can’t grasp everything but the second time you come across the subject, there is something already there, it is not new to you, you have been exposed to it and it adds to your learning and you will then recall it. Most things need to be repeated before you learn it. The number of exposures varies from one person to another.

Some of the junior trainees expressed that merely turning up to the JC meeting was in itself a learning experience.

It gets one to consider things that we should be thinking about in our working day but we don’t... it makes you think about these things.

They went on to grade the learning experience and felt that most learning on a subject was gained by the person presenting, having done the background reading and preparation for the presentation. This view was shared by all those who were interviewed including the two attending physicians. The general view was that doing a presentation involved reading around the topic, deliberating on all aspects of the article, thinking about how the evidence was assimilated, and the results put together.
Nonetheless, the majority agreed that there was also a considerable degree of learning for the passive “quiet” attendants. One of the junior trainees stated that listening with an open mind offered good learning:

You listen to people who are refreshing your memory about certain topics. You gain some information and lose or correct some others, and then go home and read about it . . . to clarify any misconceptions. I have found it a nice experience.

In contrast, a more senior trainee felt that listening on its own was not enough, and expressed the view that at his stage of training, he would want to feel that he could make a contribution especially when invited to comment. Another commented that people need to cogitate over what they have been told:

You don’t know if you’ve taken in what’s been said, so you need a discussion about it, thinking about what has been told. Some learn simply by listening but many don’t and the combination of listening and discussion should bring about reasonable learning for most of the group.

The importance of group reflection to enhance collective learning is hinted to here. A PG2 trainee also expressed similar views on the need to reflect to achieve learning:

When you have to engage some gray matter and really have to actively think, not just regurgitate what is being put forward . . . then that it is when things tend to go into my long-term memory. I can feel something is happening, and I know that something will remain after this . . .

Another trainee highlighted the learning that occurs through peer review, interaction, and response from the seniors:

I get peer review when I’m presenting, it improves my portfolio. You could go on your own and read a paper but within a group you learn by listening not only from the presenter but from the way the more senior people react to the material presented, learning the thought processes involved.

However, it was not just clinical knowledge that the JC offered as learning. A PG4 trainee stated that the presentation itself was a useful learning experience and provided the opportunity to practice how to present to a professional group:

Reflecting on it now, I’ve improved my presentation skills and it has been an excellent informal small group of colleagues where I can be at ease.

Discussion and Thinking About What Has Been Presented

There was an agreement on the importance of dialogue and discussions that followed the presentations in facilitating the learning process. It was acknowledged that it helped to clarify issues by questioning certain aspects of the presentation.

I found it especially useful when individuals ask questions about the topic being discussed. So they are actually thinking actively for themselves about the evidence presented and what it means to their practice. It often follows that others would find they have their own questions which they ask to clarify certain issues in their minds.

For some, it provided the most learning:

The discussions were where I interacted most and learned geriatrics most from the JC.

When it came to consolidating the knowledge learned in a JC, the trainees had various approaches; some felt it best done through practice, repetition, and re-exposure, others by interacting with colleagues and raising the new learned knowledge to seek their views. A couple of trainees maintained that they would like to go back and read about the topic and one stated that he would literally reflect on what he learned in the meeting itself.

One of the attending physicians felt that in addition to factual knowledge that trainees learn in a JC, they also acknowledge that sometimes there is uncertainty and difference of opinions through the discussions that ensue among the seniors in attendance.

So it’s learning along the way that even at the highest seniors sometimes disagree and there is not always a right answer.

Many related learning to practical application of the knowledge taught.

. . . you put that information from the JC next to a patient and the discussions that took place in the meeting suddenly come to life. You are actually relating it to a real-life scenario. (PG1)

Learning is actually achieved by practicing what you’ve been taught. (PG4)

Once you’ve used that knowledge with a patient, you follow a number of care plans with some repetition then that knowledge is cemented . . . but you need to get exposed to it in a number of different ways. (Fellow)

Reflection as Ingredient for Learning

The concept of reflection was explored in some detail in the interviews although it did not appear on the list of the NGT. It was interesting to note that there seemed to be little in the way of voluntary individual reflection both among trainees and consultants. One trainee noted that he would often discuss new knowledge from the JC at a later date with different colleagues not only to seek
their views but also to consolidate his knowledge. This may be seen to represent another form of collective reflection but not with those in attendance at the JC. Another trainee was more explicit and maintained that if it was for example guidelines from authoritative bodies then he will accept it or at most run it by someone else. He also remarked that if one does not know much about a topic then the best one could do is to reason it or go back and read about it, but one would reflect if there was adequate background knowledge.

Similarly, the attending physicians recognized that they practically did not reflect very often on topics discussed in the JC except when it came into clinical practice, or when the new information conflicted with previous knowledge. Nonetheless, they both acknowledged that reflection constituted an important part of the learning process.

The Role of Senior Attending Physicians in Promoting Learning

The question whether the senior members of the group had a role to play in embedding learning is an interesting point. One trainee felt that the content of the presentations would not be affected if there were no seniors, and the middle grade doctors in attendance should be able to prompt the juniors and encourage them to verbalize their thoughts. However, she acknowledged that it would not happen as often. In contrast, another junior trainee articulated a different view:

I think what the consultants do well is they ask questions which they know will be able to filter down the information and knowledge quite well. So if they weren’t there, then the juniors wouldn’t get that knowledge and maybe wouldn’t be thinking about those questions.

The view of the more senior trainees reinforced the notion that the role of attending physicians was to promote interaction and engage others in the discussions. One fellow also felt that the presence of senior physicians at the JC brought order to the meeting. This view was shared by the attending physicians themselves who felt that the meetings may not run as well. There was also the view among the trainees that the breadth of knowledge and experience of consultants were creditable so it brought out more from the article being presented through the discussions that ensued. They also helped to avoid any misinterpretation of the data that may occur.

What I have learned from the consultants at the JC is when they usually pick up on certain points in a presentation and ask what appears to be quite relevant questions which makes me think . . . I now have more insight into these other aspects. (PG3 trainee)

The trainees also mentioned that listening to the discussions that take place between the consultants was very informative, and they learned a lot from it than just listening to the presentation. This important aspect of learning, through observing the interaction between seniors, has not been described before in the JC literature. It is not only knowledge acquisition but can also be viewed to provide an element of professional development highlighted here in “the way . . . seniors . . . react to the material . . .”

The issue of insight was also reiterated by one of the consultants who explained his approach:

You are actually giving your own personal view of the study presented, the design and construct, . . . and that should help the juniors with learning more about the study . . . and oneself.

Comparing the Learning of JC to the Grand Round (GR)

The trainees interviewed were asked to compare the experience of JC with another educational activity, the GR. The GR in the faculty of medicine occurs on a weekly basis and is held in a lecture theater attended by all the medical teams often with colleagues from radiology and pathology subspecialties. The number of attendants varies but is often in excess of 50 people, a third of which are senior physicians. The format usually takes the form of an interesting case presentation by one of the medical firms supplemented by a relevant literature review and followed by a discussion. Food is also provided.

The trainees felt that the JC provided a healthier learning environment.

The JC is a very safe forum to practice doing a presentation—you’re among a group of friends.

It (the GR) is more intimidating because one is presenting to the whole board of experts and a large number of people, and you quite often see the senior physicians who tend to discuss an awful lot which as a junior doctor you feel it is above you and you can’t contribute anything. The setting of the JC is totally different.

In a JC, the members get to know each other and boundaries are removed. A sense of companionship develops among the smaller group and individuals feel less restrained to express themselves.

In a JC, I could put my point across however basic it might be because it was such a small group the others can hear what I was saying and then they can explain to me and make sure that I understand what is going on. I mean compare that to the GR where I think it is quite obvious the juniors don’t say very much because it was such a small group the others can hear what I was saying and then they can explain to me and make sure that I understand what is going on. I mean compare that to the GR where I think it is quite obvious the juniors don’t say very much because it was such a small group the others can hear what I was saying and then they can explain to me and make sure that I understand what is going on. I mean compare that to the GR where I think it is quite obvious the juniors don’t say very much because it was such a small group the others can hear what I was saying and then they can explain to me and make sure that I understand what is going on.
The trainees felt they were not involved in the discussions and unable to express a view or ask questions in a GR meeting. This view was echoed by most of the trainees:

It’s not easy to ask questions in a grand round . . . my question maybe just because I haven’t listened or I don’t have enough knowledge which will make me look stupid.

The formal structure of the GR restricted their learning. In contrast, they were more comfortable with the informal open learning environment of the JC and felt it conferred more learning. The JC also offered a better grasp on topics relevant to the specialty and delivered more from a practical point because it was more focused whereas the GR presentations were often obscure cases that a junior trainee rarely came across.

Discussion

One of the essential requirements for any qualitative study, regardless of its size, is to demonstrate consistency of results. All the five main points selected by the NGT were reiterated in the interviews as important in enhancing the process of learning in a JC setting.

There was a consensus that the trainee preparing the presentation would be learning most about the topic, and given that the trainee had chosen the article to present, she has determined her learning needs and expanded her knowledge reinforcing the concepts of situated directed learning (SDL) and Carol Rogers’s humanistic approach of freedom to learn (Kaufman & Mann, 2007; Knowles, Holton, & Swanson, 2005; Rogers, 1961).

The importance of maintaining relevance and relating the learning to clinical practice, the second ranking point in NGT, was elaborated on during the individual interviews. Trainees of all grades stressed that it was real-life situations and practical application of new knowledge that stimulated most learning. The learning was consolidated when it was aligned to their clinical experience in dealing with patients. These results are in keeping with the principles of adult learning (Knowles et al., 2005) where the readiness to learn is related to their need to cope effectively with real-life situations, and demonstrate nicely that postgraduate learning tends to be driven by self-motivation and relevance to clinical practice.

Discussion and interaction, the essential components which define the concept of JC’s, were noted to be fundamental for learning and consolidation of knowledge acquisition in both the NGT and the interviews. This is probably the most important ingredient to the collective learning that takes place in JC endorsing both cognitive and constructive theories as underpinnings to JC learning (Mezirow, 1991).

The consultants added to the learning process by helping to link pieces of information together and relate it to clinical practice, drawing from their own experience and expressing it to the audience.

Interestingly, listening to the discussions that took place between the consultants was considered important learning opportunities, highlighted in both the NGT and interviews. In fact, the dialogue between seniors ranked higher in the NGT results than the informal debate between the trainees and/or critically discussing the paper at end of presentation. The key role of senior input has been traditionally noted as facilitation—to inspire thinking, promote understanding, and construct knowledge. Here, however, senior input has taken a different perspective and can be seen as providing a real-time debate of expert points of views and exchange of credible knowledge which not only enhances learning but also provides professional development. Listening to role models debating, expressing their views, and articulating their expertise, an opportunity which trainees can experience firsthand, is another mode for the learning that occurs in JCs, and which to my knowledge has not been identified previously.

The role of reflection as a learning process to enhance learning did not score highly as an individual activity both among the members of the NGT and in the one-to-one interviews. Instead, the NGT marked highly the importance of group discussion and debate between peers which may be considered as collective reflection among the group. Similar views were also highlighted in the individual interviews. This form of reflection where individuals exchange ideas to increase collective learning appeared to be the preferred model in our JC setting.

The importance of maintaining a safe relaxed learning environment where everyone can freely express their views was stressed by most of the interviewees. In fact, it was noted as one of the salient points that made the JC attractive and allowed for open discussions and questions by the participants.

It suggests that the social aspects of JC go beyond the friendly gathering reported in the literature (Cave & Clandinin, 2007; Spillane & Crowe, 1998). There is a sense of belonging and comradeship, and appreciation of other colleagues’ contribution which adds to the sociocultural context. As well as learning from each other, the more senior members explain and clarify issues to the junior trainees and the less experienced. This is a typical example of community of practice where learning takes place through a process called legitimate peripheral participation (Lave & Wenger, 1991). The learning for the individuals which ensues within such community is very effective (Wenger, 1998). This may explain why the trainees felt the JC was more educationally useful and rewarding than the GR.

This study was conducted among members of a geriatric firm in a district general hospital. Within this narrow confine, one may argue that our findings are limited to one particular group and subspecialty of medicine.
However, learning is universal and approaches to medical education, within limits, can be generalized. We therefore feel that the results of this study may be applicable to JCs of other medical disciplines. Finally, our study was a short-term study exploring acquisition of knowledge and learning. We did not investigate long-term retention of knowledge and information but rather the process of learning that occurs in a JC setting. A possible approach for a future study would be to consider adding a quantitative component looking at retention and acquisition of knowledge after a defined period of time.

Conclusion

Although the literature describes the benefits of the JC and its different formats, to our knowledge, this is the first study looking into the learning process that is associated with JC in geriatrics.

Employing a qualitative approach, this study confirms that the JC, as an educational platform in geriatrics, provides significant learning through its unique style. It can be a learning experience even for the senior physician. A JC may be envisaged as a community of practice where new comers (new trainees) are introduced to the practice of the group and start to participate in the learning activities. The “community” of the JC has its defined goals and objectives, and members come together to improve their practice and professional development through relevant learning, active engagement, and interaction.

The learning that occurs is enhanced by relating the content of the JC presentation to real-life clinical cases and through promoting discussion. The study has also shown the role of attending physicians as credible source of knowledge in enhancing learning among trainees. Importantly, it revealed that the dialogue which occurs between attending physicians offered a real-time learning opportunity which ranked higher than the peer discussions previously identified as the main learning source in JC.

The JC as an educational platform is here to stay for a good few years to come.

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