

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

# **Is Evidence Based Librarianship just an attractive theory, or can practicing librarians make it work in real life?**

**Nicola Pearce-Smith (nee Bexon)**

## **Background**

### **Evidence-based practice**

Evidence-based practice is a model that originated within healthcare, and it is now being applied to other disciplines, such as education and social work<sup>1</sup>.

Evidence-based practice, as defined by Sackett<sup>2</sup>, involves a number of steps:

1. Identifying a question
2. Finding the best available evidence to answer this question
3. Critically appraising the evidence
4. Applying the results to a specific population
5. Evaluating the outcome

One of the major elements of evidence based practice is the ability to apply the results from rigorous research studies to professional practice, in order to improve the quality of care or services. One of the tools available to assist in this is critical appraisal, used within the context of a journal club. The journal club originated in medical schools at the end of the 19<sup>th</sup> century, and was used regularly for continuing medical education<sup>3</sup>. More recently, in healthcare, the journal club has been used as a method of teaching critical appraisal skills, and a number of studies looking at the use of journal clubs for appraisal have been published.

A systematic review examined whether studies have found journal clubs for physicians in training to be effective for improving patient care, teaching critical appraisal skills, and increasing the use of medical literature in clinical practice<sup>4</sup>. They found one randomized controlled trial showing an improvement in the use of medical literature in practice, but no improvement in critical appraisal skills, and six less methodologically rigorous studies showing an improvement in critical appraisal skills.

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

An evaluative study outlined how a journal club can be used successfully to help bridge the gap between research and practice for nursing students<sup>5</sup>. A study of a program developed to teach critical appraisal skills to postgraduate trainees found that trainees' reading time improved significantly, along with their knowledge scores, after attendance at a journal club<sup>6</sup>.

Two members of the Centre for Evidence Based Medicine in Oxford outline how to run a journal club, based on a systematic literature search and their own experiences<sup>7</sup>. They found that common themes in successful journal clubs seem to be the fact that they are driven by individuals' own questions, and lead to creation of a written record, such as a Critically Appraised Topic (CAT).

### **Evidence-based librarianship**

A number of information professionals suggest it is possible to adapt the model of evidence based practice used in healthcare, in order to utilise it for librarianship and information work<sup>8</sup>. When the steps of evidence-based practice are examined, it is evident that they could all be applied to librarianship. Librarians are usually skilled in the first two steps of evidence based practice, due to their work supporting their users. However, increasingly they need to possess the expertise necessary to assess the validity and reliability of research evidence, and must also make decisions about how to apply the evidence to their own practice. This process of Evidence-Based Librarianship (EBL) is an exciting concept, but is it practical for librarians in the field? This led us to ask the question - is EBL just an attractive theory, or can practicing librarians make it work in real life?

There is a paucity of literature evaluating journal clubs for librarians. It could be that there are not many established journal clubs, or it may be that librarians are developing and attending these meetings, but are not evaluating them or publishing their experiences. A 'Using Research in Practice' column in *Health Information and Libraries Journal* gives details about the development of two journal clubs for librarians, one in Canada, one in the UK<sup>9-11</sup>. These journal clubs were established mainly for professional discussion and debate, and although appraisal and applying the evidence are mentioned as part of this, appraisal evaluation tools were not used.

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Benefits of running a journal club for librarians were listed as a supportive environment to examine current practice, networking opportunities, a forum to develop critical appraisal skills, keeping up to date with the literature and continued professional development, but it is not clear whether this was based on survey evidence<sup>11</sup>

Advantages and disadvantages of internet discussion journal clubs versus face to face meetings were outlined in an older article<sup>12</sup>, which also did not appear to have an evaluative aspect. Another descriptive article summarises the use of a journal club to produce Critically Appraised Topics in Communication, Health Informatics and Technology (CATCH\_IT) reports – these provide a platform for discussion around results and methodology<sup>13</sup>. No research studies involving an evaluation of the use of journal clubs for developing appraisal skills for librarians were found.

### **Development of appraisal tools for librarians**

Research studies in the librarianship and information field are not commonly randomised controlled trials (RCTs) or systematic reviews. The checklists developed for appraising these types of evidence (e.g. JAMA User guides <http://www.usersguides.org/> or Critical Appraisal Skills Programme (CASP) tools for appraisal <http://www.phru.nhs.uk/casp/appraisa.htm>) are therefore of limited use for librarians. The majority of research in librarianship consists of descriptive surveys, observational studies, case studies, qualitative research or expert opinions<sup>14;15</sup>. This provides challenges, but not does not prohibit the appraisal and use of this research.

In 1999, a series of workshops called Critical Skills Training in Appraisal for Librarians (CriSTAL) were developed to provide librarians with the skills necessary to appraise and apply research<sup>16</sup>. These workshops involved the development and use of two appraisal checklists based on question types commonly asked in the library field – information needs analysis and user studies.

### **Methods**

Our aim was to establish a journal club for health librarians and information scientists which would develop critical appraisal skills, increase awareness of library-related

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

research, and assist in the application of research to library practice. The journal club idea commonly used in evidence based medicine was taken and adapted for use in evidence based librarianship.

**Structure of the journal club**

Journal club meetings were held once a month, and 14 health librarians were invited to attend. The health librarians were mainly based in Oxford – some work in medical libraries serving local University and clinical staff, and others are information scientists providing electronic resources and services for NHS staff nationally.

For each of these meetings, a different librarian was responsible for preparing a scenario, choosing a relevant research paper from the literature and selecting the appropriate CriSTAL checklist. Librarians were encouraged to identify questions and scenarios from their own practice. During the journal club meeting, the paper was critically appraised by the group, using the checklist. If the paper selected was not explicitly an information needs analysis or a user study, relevant questions on the CriSTAL checklist were still used to assist appraisal. For example, questions regarding the study focus, the selection of participants or data, the presentation and analysis of results, the possible biases and the overall applicability of the study to individual practice, are relevant to all types of question or research design.

The librarian who selected the paper also acted as facilitator to the group, and took notes of the main issues. Each meeting lasted between 1 and 1.5 hours. Afterwards, a critically appraised topic (CAT) was prepared and disseminated to all group members.

**Evaluative survey**

Six months after the first meeting of the journal club, a questionnaire was sent to the participating librarians. This survey aimed to discover whether attendance at the journal club meetings had helped the librarian to identify questions, read more library-related literature, improve their critical appraisal skills and apply the appraised evidence to their own practice. Questions 2-8 asked participants to rate statements according to whether they agreed or disagreed, and Qs 9-13 asked them to comment on their rating. A copy of the questionnaire is included in Appendix 1. The final

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

question on this survey asked about the potential barriers to librarians attending journal clubs – this question was also sent to the librarians who had been invited but never attended.

## **Results**

Six journal club meetings have been held to date, each appraising one research paper.

The papers appraised included studies that aimed to:

- assess the impact of an evidence-based medicine curriculum on students' EBM skills<sup>17</sup>
- determine the extent of use of the Internet for clinical information amongst family practitioners<sup>18</sup>
- determine the awareness and use of methodological search filters by librarians<sup>19</sup>
- assess whether impact factors are a useful measure of the quality of medical journals<sup>20</sup>

A total of seven librarians have participated in two or more meetings. The highest attendance for any meeting was seven, the lowest was three. The six meetings were each facilitated by a different librarian, and all six appraisals have been recorded as a CAT and made available to the group. An example of one of these CATs is included in Appendix 2.

Five out of the six participating librarians [excluding myself as the seventh] returned the survey (83.3% response rate) – two information scientists, two information specialists and one clinical effectiveness librarian. None of these five librarians had ever attended a journal club before.

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

**Table 1 (Qs 2-8) Attending the journal club has helped me to:**

	<b>Strongly agree</b>	<b>Agree</b>	<b>Neutral</b>	<b>Disagree</b>	<b>Strongly disagree</b>
<b>identify &amp; formulate questions</b>	1	2	2	0	0
<b>search library-related databases research</b>	0	3	2	0	0
<b>read more library-related research</b>	2	1	2	0	0
<b>develop critical appraisal skills</b>	4	1	0	0	0
<b>write a CAT summary</b>	4	1	0	0	0
<b>apply the results to my own practice</b>	0	2	3	0	0
<b>influence the decision-making of colleagues</b>	0	0	5	0	0

The survey showed that none of the librarians strongly disagreed or disagreed with any of the first eight questions. All five librarians strongly agreed or agreed that attending the journal club had helped them to develop critical appraisal skills and write a Critically Appraised Topic. 3/5 librarians strongly agreed or agreed the journal club had helped them to identify and formulate questions relevant to their own practice, and facilitated them in reading more library-related research. 3/5 librarians also agreed that they searched library-related databases such as Library and Information Science Abstracts (LISA) as a result of attending.

Two librarians agreed that attending a journal club did help in applying the evidence to their own practice, but three stated the journal club had neither helped nor hindered (neutral). All five librarians selected 'neutral' for the question about influencing the decision-making of a colleague.

## EAHIL Workshop

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Table 2 (Qs 9-13)

	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
Diversity of job roles means that research selected is not always relevant to individuals	0	2	1	2	0
It is difficult to find research relevant to my library or information practice	0	1	1	2	1
I always search for and identify a research paper first, then create a scenario and question	2	2	1	0	0
Applying the results of the appraisal to my own practice is difficult	0	1	3	1	0
Attending the journal club has made me more critical when reading research studies	3	2	0	0	0

These questions produced more difference of opinion between the librarians. For the question about diversity of job roles, two librarians agreed, two disagreed. One of the librarians choosing 'Agree', stated:

*"Although I agree with the statement, I don't think that it is a bad thing - it's interesting to know what is relevant to other health care librarians/information specialists"*

A librarian who selected 'Disagree', wrote:

*"I have learnt something from each session. I may not use it now, but can store it for future use."*

Three librarians strongly disagreed or disagreed that it was difficult to find research relevant to their own practice. Two comments from these librarians stated:

*"I work in an area of librarianship that is developing rapidly and there is always new research in this area"*

*"There are too many!"*

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

The librarian that agreed with this statement, commented:

*“This is because of the nature of our library - being available for both University students/staff and ORHT [Oxfordshire Radcliffe Hospital Trust], which makes us a bit unusual and complicated”*

Four of the librarians agreed or strongly agreed that they always identified a research paper first, then created a scenario and question afterwards. A librarian who strongly agreed with this statement wrote:

*“Before searching I always chose a topic that I’d like to find out more about, then I search and identify an article, then write the scenario – I find this works best for me”*

This suggests that these librarians are not identifying questions directly from their practice, but instead are finding a topical or interesting paper to appraise, and then formulating a question and scenario which could be answered by this paper.

One librarian agreed that applying the results to their own practice was difficult, one disagreed and three were neutral. Comments were:

*“Sometimes there are appraisals where I cannot apply the results to my own work, however, generally I think there is always something (even something small) that I have learnt from a study that I can take back to my own library – even if it more of a concept that I think may be useful etc.....”* (Disagree)

*“I am currently focussing on web/content development and literature searching, and I don’t think these have been covered, unless I missed them. However, the general skills I do use (e.g. critical appraisal skills)”* (Agree)

All five librarians strongly agreed or agreed that attending the journal club had made them more critical when reading research studies.

*“I don’t just accept everything I read just because it appears in an academic journal”*



## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Qs 14 asked participants whether they had applied any of the results from the journal club appraisals directly to their own practice. Two librarians chose 'Yes', three librarians chose 'No'.

A librarian answering 'Yes', made this comment:

*"Information and findings from several of the appraised studies have been used when writing summary articles/search narratives/content development strategies"*

A comment from a librarian answering 'No':

*"Haven't really had time (fire-fighting right now!), but I look forward to applying results in the future - am keeping the CATs all together in a CPD/ideas file"*

**Table 3 (Qs 15) Which barriers prevent librarians from attending a journal club?**

<b>Barrier</b>	<b>Number of times chosen</b>
<b>No time</b>	5
<b>Staff-shortages</b>	4
<b>Availability of journal clubs</b>	3
<b>No management support</b>	3
<b>Lack of knowledge about journal clubs</b>	3
<b>Applying evidence too difficult</b>	1
<b>No interest</b>	0
<b>No appropriate facilities</b>	0
<b>Not relevant to practice</b>	0

Lack of time and staff shortages in the workplace were considered to be the greatest barriers to librarians attending a journal club. None of the librarians considered a lack of interest or not being relevant to practice, as important barriers to attendance at journal clubs.

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

The same question (but stating which barriers prevented **you** from attending **this** journal club) was sent to the seven librarians who had been invited but never attended. All seven replied (100% response rate) and their results are below:

**Table 4 (Qs 15) Which barriers prevent you from attending this journal club?**

<b>Barrier</b>	<b>Number of times chosen</b>
<b>No time</b>	5
<b>Staff-shortages</b>	3
<b>Availability of journal clubs</b>	0
<b>No management support</b>	1
<b>Lack of knowledge about journal clubs</b>	0
<b>Applying evidence too difficult</b>	0
<b>No interest</b>	1
<b>No appropriate facilities</b>	0
<b>Not relevant to practice</b>	0

One librarian added “Other: prior teaching engagements” and another commented that:

*“I’ve had the dates in my diary, but been unable to attend because more urgent meetings have been scheduled for that day or I have been on leave”.*

Lack of time and staff shortages were also the most commonly stated reasons for these librarians not attending this journal club. One said they had no interest in attending, but no-one gave the reason that a journal club would not be relevant to their practice.

## **Discussion**

The results of the survey showed attendance at this journal club helped librarians to develop their critical appraisal skills, create a written record in the form of a CAT, and to a lesser extent, read more library-related research and identify relevant questions. However, it was noticeable that most librarians did not always follow the steps of evidence-based practice in order – that is, they tended to find research that interested them first, then created a scenario and question to fit this, rather than

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

identifying a relevant question from their practice initially and going on to obtain appropriate research to answer this. This demonstrates that librarians may find it difficult to relate their work directly to the evidence based practice process, questions identified during work may not be remembered later, or perhaps librarians are not confident that questions which arise from their practice can be answered by the research literature available.

Development of skills such as critical appraisal did not lead to librarians influencing the decision-making of a colleague. From our small survey it appears that librarians who attend a journal club do not yet use their acquired knowledge and skills as a tool to assist or persuade colleagues.

There was no consensus in opinion as to whether librarians thought that their different job roles would affect the relevance of the papers selected. Interestingly though, the librarians who agreed that papers were not always relevant commented that this was a good thing as it was a useful way of keeping up with research in other areas, and those who disagreed stated that even if the research was not relevant to them immediately, it could be stored for future use. Diversity of job roles leading to selection of papers which were sometimes not relevant to all members, was not seen as a limiting factor in the development of a journal club. Also, finding relevant research did not seem to be a problem for most librarians, with one stating research in their area of work was expanding rapidly. Overall it is evident that participating in a journal club makes librarians more aware of the research available, and encourages them to search in more depth. Furthermore, attending a journal club also makes librarians more critical when reading research studies, a skill which is vital if they are to embrace and use better quality research.

The most difficult stage in EBL can often be applying the appraised evidence to your own practice. However, two librarians stated they had already applied the results from a journal club appraisal directly to their own practice, which was a positive example of EBL working in real-life. The librarians who had not yet applied any results directly were storing their CATs for later use or waiting for research papers that were more related to their own practice.

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

The most frequently chosen barriers to attending a journal club were lack of time and staff-shortages at the workplace – this was reinforced by the librarians who did not attend any of the meetings. Lack of time is often given as a reason for not consulting research evidence<sup>21</sup> or not evaluating current practice. Brice and Booth state that “*the alternative [to service evaluation] is to run the risk of wasting valuable time by persevering with some intervention that the evidence might demonstrate to be ineffective*” (p9)<sup>8</sup>. Librarians must be reassured that participation in aspects of evidence based librarianship such as journal clubs is an effective use of their time. Having management support and staff-cover available to take time away from front-line library duties is also extremely important.

### **Conclusion**

Our aim was to establish a journal club which would develop critical appraisal skills, increase awareness of library-related research, and assist in the application of research to library practice. The survey demonstrated that journal clubs can be effective at developing the skills of appraisal and CAT production, as well as increasing the reading of library-related research and the identification of research questions.

This survey has also shown that librarians still need assistance in being able to identify and use questions directly from their own practice. One possible way of helping librarians to identify and remember questions is to encourage them to record questions as they arise, which can be answered at a later stage. For example, the Centre for Evidence Based Medicine ([www.cebm.net](http://www.cebm.net)) have created a paper log-book for health professionals to record all their questions, with space to write comments about appraisal of the research used to answer the question, and bottom-line conclusions.

Some librarians had applied the results from the research appraised in a journal club to aspects of their own practice, which is encouraging, and others mentioned keeping a collection of the CATs for future reference. Being able to identify relevant questions from practice will help with the application of appraised research to a librarian’s own population. The survey confirms that the journal club has helped some librarians to

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

apply evidence to real-life practice, but that others find the research is not always directly relevant, or have not yet had the time or opportunity. However, those who have yet to apply evidence, still found the journal club a useful forum for the development of important evidence-based practice skills.

As stated before, lack of time and staff-shortages are not surprisingly the most common reasons given for librarians not attending a journal club. Until the development of critical appraisal skills and the application of research to practice is seen as a benefit to the library or information service as whole, an individual librarian working within these services may not be allowed the time or support to attend journal clubs. It is apparent that those who did attend had the support of management to do so, and found the experience worthwhile.

It would be useful to disseminate the CATs produced by this journal club and other established clubs more widely, perhaps on a website, but this would require funding to develop. Having access to a collection of appraised research articles would prove a useful asset to librarians wishing to be evidence-based, and could encourage others to contribute their own appraised articles.

Limitations of this study include the small survey sample of health librarians and information scientists in the Oxford area, and the fact that the participants self-assessed their skills (i.e. there was no actual evaluation or test of their critical appraisal skills). We need more journal clubs for librarians to be evaluated and published, in order for us to have more of an evidence base in this area.

To conclude, in answer to the question - is EBL just an attractive theory, or can practicing librarians make it work in real life? – it is possible to apply evidence based skills to real-life library practice. The development of a journal club as a tool for assisting in the practice of EBL, was an effective method for health librarians and information scientists based in the Oxford area. There is still some way to go before evidence-based practice becomes as well integrated into the library profession as it is in healthcare, but attending a journal club is a step in the right direction.

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

## **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

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### **EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

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**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Appendix 1: Journal club survey

Job title:

1. Have you ever attended a journal club prior to this one?      Yes       No

**Please rate these statements according to the scale below:**

Attending the journal club has helped me to:

2. identify and formulate answerable questions from my own information practice

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

3. search library-related databases such as LISA for research papers relevant to library and information science

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

4. read more library and information science-related research papers

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

5. develop my critical appraisal skills

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

6. write a summary of the appraisal in the form of a Critically Appraised Topic (CAT)

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

7. apply the results from the appraisal to my own practice

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

8. influence the decision-making of colleagues within my library or information service

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

**Please rate these statements according to the same scale, and also comment on your answer:**

9. The diversity of job roles reflected by attending librarians, means that the research papers selected are not always relevant to individuals

Strongly Agree     Agree     Neutral     Disagree     Strongly Disagree

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Please comment on your answer:

10. It is difficult to find research studies relevant to my library or information practice

**Strongly Agree**     **Agree**     **Neutral**     **Disagree**     **Strongly Disagree**

Please comment on your answer:

11. I always search for and identify a research paper first, then create a scenario and question around this

**Strongly Agree**     **Agree**     **Neutral**     **Disagree**     **Strongly Disagree**

Please comment on your answer:

12. Applying the results of the appraisal to my own practice is difficult

**Strongly Agree**     **Agree**     **Neutral**     **Disagree**     **Strongly Disagree**

Please comment on your answer:

13. Attending the journal club has made me more critical when reading research studies

**Strongly Agree**     **Agree**     **Neutral**     **Disagree**     **Strongly Disagree**

Please comment on your answer:

14. Have you applied any of the results from the journal club appraisals directly to your own practice?    Yes  No

Please comment on your answer:

**Please tick all those that apply below.**

15. In your opinion, which of these barriers prevent librarians attending a journal club?

- |                               |                          |   |                          |
|-------------------------------|--------------------------|---|--------------------------|
| No time                       | <input type="checkbox"/> | No management support                     | <input type="checkbox"/> |
| Staff-shortages               | <input type="checkbox"/> | No appropriate facilities (meeting rooms) | <input type="checkbox"/> |
| No interest                   | <input type="checkbox"/> | Lack of knowledge about journal clubs     | <input type="checkbox"/> |
| Availability of journal clubs | <input type="checkbox"/> | Applying evidence too difficult           | <input type="checkbox"/> |
| Not relevant to practice      | <input type="checkbox"/> |   |                          |

**EAHIL Workshop**

Implementation of quality systems and certification of biomedical libraries  
Palermo, June 23-25, 2005

Appendix 2: example of a Critically Appraised Topic (CAT)

**There is a strong correlation between impact factors and physicians ratings of journal quality**

**Bottom Line:** For the 9 medical journals selected, a strong correlation was found between impact factor and physicians ratings of journal quality, which was significant ( $p < 0.001$ ).

**Focused Question:**

Are impact factors useful as a measure of the quality of medical journals?

**Citation:**

Saha S, Saint S, Christakis D. *Impact factor: a valid measure of journal quality?* Journal of the Medical Library Association 2003, 91(1) pp42-46 (Full text available at <http://www.pubmedcentral.nih.gov/articlerender.fcgi?artid=141186>)

**Search terms:**

impact factors; evaluation; quality; journals

**Summary of the aim and methods of the study**

- The authors sought to examine whether impact factor is a valid measure of journal quality as rated by clinical practitioners and researchers.
- The sample was 416 physicians specialising in internal medicine in USA - 208 randomly selected (not clear how) practitioners from the American Medical Association's (AMA) master list, and 208 researchers from the alumni directory, randomly selected using a random number generator
- These participants were all sent a questionnaire - no information was given about this data collection instrument, except that they asked respondents to rate the overall quality of nine medical journals, and they asked respondents to report whether they subscribed to or read each of the 9 journals

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Palermo, June 23-25, 2005

### **Main Results**

- Response rate was good - 66% overall, 58% from practitioner group and 74% from research group. 135 people did not respond and no explanation or breakdown of group was given.
- There were no significant differences between respondents and non-respondents in terms of age, graduation year or subspecialty training
- There was a strong correlation between impact factor and physicians ratings of journal quality, which was significant  $p < 0.001$ .
- Physicians ratings of journal quality correlated more closely with impact factor than with subscription rates or with readership rates.

### **Comments:**

- Good rationale and justification for conducting the study, as there is clearly a need for information on the value of impact factors.
- Good response rate
- No sample size calculation – so not sure how they came up with the figure of 416 physicians
- Not given much information about the total population of physicians, so difficult to know if the selected population for this survey was significantly different from other physicians – probably not different enough to make study unusable
- Not clear why a random number generator was used for the researchers but not for the physicians.
- No information given about the questionnaire - a copy of the questionnaire would be needed in order to replicate study
- A limitation of the study was discussed by the authors - not all physicians had read the journals they were rating so opinions might have been based on perceptions. Physicians may rate a journal as good because it is prestigious like JAMA, or low quality because they haven't heard of it before.

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**Appraised by:** Oxford Health Librarians journal club, January 2005