The right tools for the job: a usability survey of critical appraisal tools

Rachel Esson
Medical Librarian
University of Otago, Wellington
rachel.esson@otago.ac.nz

Abstract:
Evidence-based librarianship uses evaluation of library research to inform change and decision-making. It makes explicit the process of evaluating the information we base our decisions on. To evaluate the information we have a range of critical appraisal tools available, including question-based checklists, study design checklists and generic checklists, but how do we know which ones to use and how should we use them?

At the end of 2005, a journal club for Health Librarians was established with the aim of developing critical appraisal skills and increasing awareness of library-related research. A survey carried out in 2006 established that those who attended journal club meetings felt the club had helped them to develop critical appraisal skills. A year down the track members have agreed to take part in a survey to evaluate a selection of appraisal tools and establish which of these they preferred using. The survey will establish which tools can be used in real work situations to help librarians make workplace changes based on good evidence.

This presentation will summarise our findings and make recommendations for how to use critical appraisal in making decisions about implementing changes in your library. It will discuss the benefits of critical appraisal as well as the pitfalls.

Background


Evidence-based practice evolved out of medical practice, where the most common definition is taken from Dr. David Sackett, one of the early proponents of evidence-based medicine. Sackett defines it as:

"the conscientious, explicit and judicious use of current best evidence in making decisions about the care of the individual patient. It means integrating individual clinical expertise with the best available external clinical evidence from systematic research." (D. L. Sackett, Rosenberg, Gray, Haynes, & Richardson, 1996)

You may have thought that doctors would do this already; that is, that they would read relevant research, appraise the quality of the research, and integrate it into their practice when treating patients. It turns out, however, that this is not always the case. As doctors
become more clinically experienced, their up-to-date knowledge may decline. (D. Sackett & Parkes, 1998). They may begin to practice confirmation bias where they look only for information that supports what they already believe.

Evidence-based practice aims to make explicit the process of locating research, reviewing it and applying it your question or patient and in doing this both improve patient care and reduce the chance for error.

The following five steps have been identified in the evidence-based practice process (D. Sackett & Parkes, 1998):

1. Identify the question
2. Find the best available evidence to answer the question
3. Critically appraise the evidence
4. Apply the results to a specific population
5. Evaluate the outcome

Librarians may recognise that this process is essentially an information management process, and certainly steps 1 and 2 are what many reference librarians spend their working day doing. So what about steps 3 to 5? Should we be doing these as well?

“For many information professionals, involvement in evidence-based practice has led variously to an epiphany-like realization or, more commonly, to a nagging awareness that they too should be practising evidence-based practice.” (Booth & Brice, 2004 p. 7)

If we agree that using evidence to improve our decision-making is desirable, how do we then implement evidence-based practice? We have to consciously decide to make explicit the use of research when making decisions. This means taking time to carefully appraise the research articles that we read. This is where journal clubs and critical appraisal tools fit in.

**Journal clubs and critical appraisal tools**

Journal clubs are groups of individuals who meet regularly to discuss critically the practical application of articles from the professional literature relevant to their field.

In the early 1900s in Germany, journal clubs were routinely found in departments of medicine and medical schools. Gradually journal clubs evolved into a forum for continuing medical education and more recently have been designed to teach critical appraisal skills.

The goals of journal clubs have remained consistent over the years. The most frequently listed goals are: to keep up with the literature, to impact on practice, and to teach critical appraisal skills. (Linzer, 1987)

In 2005 a journal club for librarians was started in Wellington. An invitation was posted on library listservs and the first meeting was held in November 2005 and attended by nine librarians from a variety of organisations.
Club members discussed the aims of the club and it quickly became apparent that most members were keen to improve and practice their critical appraisal skills.


Critical appraisal should not be seen as the key to all good decision making. It is a step in the process on the way to evidence-based practice. As Booth (2007 p. 72) states “…many who encounter critical appraisal for the first time feel slightly cheated in that they expect to discover answers – 42, life, the universe and everything.”

Critical appraisal tools give us a framework with which to analyse the literature. They are most often checklists that ensure that we don’t overlook important considerations. The journal club members tried a few different critical appraisal tools and eventually, after informal discussion, settled on CASP (Critical Appraisal Skills Programme) as the standard tool for the club (CASP Collaboration for qualitative methodologies, 2006). This provided a set of 10 questions as a guide to appraising qualitative research.

In 2006 the journal club presented a poster at the LIANZA annual conference. The poster displayed results of a survey looking at how beneficial attendance had been for club members.

While all who responded to the survey agreed that it was beneficial, only two out of the 11 agreed that attendance “had helped to influence decision making with work colleagues”.

An informal discussion to unpack this result discovered that some members still felt uncertain regarding the critical appraisal process. We wondered if this might be due to the critical appraisal tool that was used and agreed this year to conduct a usability survey. We wanted to establish how the tool the journal club used compared to a more recently developed evidence-based librarianship tool.

The journal was already using CASP (Critical Appraisal Skills Programme), 10 questions to help you make sense of qualitative research and the newer tool was EBL (Evidence-based Librarianship) critical appraisal checklist. CASP 10 questions were developed by the Public Health Resource Unit in England. It presents a number of questions that give guidance in how to appraise the principles that characterise qualitative research, and recommends extensive further reading.

The EBL critical appraisal checklist was developed last year by Lindsay Glynn (a librarian in Health Sciences in Canada) in response to the increase in library and information research, the increase in interest in EBL, and the suggestions of previous research that the need for a more detailed, functional EBL tool has arisen. (Glynn, 2006 p. 388)

**Method**

The journal club members agreed at a meeting to survey two appraisal tools and to find out which one they would be more likely to actually use if they needed to evaluate a study for
work. The aim was to find out how practical these tools were for regular use.

The survey was designed by a club member using Survey Monkey (free online survey software). Journal club members were emailed the link to an article (White, 2006) that had been appraised previously by the club. The idea behind this was to reduce the amount of work asked of the members and make it easier to concentrate on evaluating the tools rather than the content of the article.

Copies of the two critical appraisal tools were sent as attachments. Members were asked to appraise the article using both tools and then to complete the nine-question survey. The survey was emailed out to all 15 journal club members on the regular email contact list.

**Results**

Survey was emailed out to 15 journal club members and a total of eight responses (53%) were received. Survey respondents gave answers to all questions.

Half of the respondents worked in a special library and the other half in an academic library. There were no respondents from a public library or specified in the “other” category.

50% (4) of respondents used critical appraisal sometimes, i.e. more than once a year but less than once a month. One respondent used critical appraisal very often (at least once a week). Over half (75% or 6) of the club members who answered the survey used critical appraisal tools either all the time or sometimes, and 25% (2) didn't use an appraisal tool.

One of the respondents didn’t use a formal appraisal tool due to “[l]ack time to do a formal appraisal on material being selected for library users. Instead rely on library assessment skills and years of experience in field to distinguish reliable information from unreliable. Ultimately the final decision as to which resource to use lies with the library user.” Another simply said...
that a formal tool “wasn’t always appropriate”.

All eight respondents (100%) had used CASP (Critical Appraisal Skills Programme) which wasn’t surprising as it was the tool selected by the journal club. Other tools that had been used were DISCERN (25%), RELIANT (25%), GATE (Graphic Appraisal Tool for Epidemiology) (12.4%) and EBL Critical Appraisal Checklist (25%).

Those working in Academic libraries were more likely to have used a broader range of appraisal tools.

Respondents were asked to rate the tools for friendliness, clarity, comprehensiveness, ease of use and how helpful they were. They were asked to rate each feature on a five point scale from “not at all” through to “extremely”.

Question 5 asked “Did you find the CASP 10 questions tool:”

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<td>Comprehensive</td>
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<td>Easy to use</td>
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<td>Helpful</td>
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<td>25.0% (2)</td>
<td>62.5% (6)</td>
<td>12.5% (1)</td>
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The majority (87.5% or 7) said they would use the CASP tool again to evaluate an article and 12.5% (1) said perhaps and added the following comment:

“It is only applicable to qualitative research, so I’d probably use the tool’s screening questions in the first instance to determine whether or not I was evaluating a qualitative or mixed methods article”

Question 7 asked “Did you find the EBL Critical Appraisal Checklist:”

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One said they would definitely use the EBL Critical Appraisal Checklist again to appraise an article, one said a definite no and the rest 75% (6) said “perhaps”.

Half of the responses commented that the tool used “would depend on the type of research being evaluated.”

“My decision would be largely reliant on the type of research being reviewed” and “…the EBL checklist is applicable to quantitative, qualitative and mixed methods studies” or “If the article
included population based data”.

One respondent commented that they thought that the EBL checklist would not be appropriate for critical appraisal novices as “this tool assumes an understanding of the terminology – it doesn’t elaborate on any of the questions”. Another comment acknowledged that the EBL tool was “not as user-friendly as the CASP tool”.

Nearly all (87.5 %) of respondents rated the CASP 10 questions checklist as their preferred tool. One preferred the EBL Critical Appraisal Checklist and one respondent did not state a preference, commenting that they “feel there is no ‘one size fits all’ appraisal tool and that both could be used depending on the type of article being assessed”.

**Discussion**

There are many limitations to this study. It has a very small sample size and appraising a tool that many had used before in comparison with one that had not been used as often is likely to have been a factor in the preference of club members who completed the survey. It is also possible that those who were less confident about conducting critical appraisal to start with would have been less likely to complete the survey and appraisal exercise.

The CASP 10 questions tool was rated “Mostly” or “Extremely” by 75% (6) of respondents in all the categories; it was perceived by the respondents as friendly, clear, comprehensive, easy to use and helpful. From the sample that completed the survey we can say that for those journal club members working in an academic or special library and who are able to attend journal club meetings, critical appraisal does have the potential to be an everyday process when relevant.

The implication from these results is that it is possible to use critical appraisal in your day-to-day work when you have a change you want to make in your library.

Librarians are experts at asking questions and finding the best evidence to answer the question and with practice we can learn to use appraisal tools to analyse that evidence for validity and usefulness. We can then apply the results to our workplaces.

It is important to recognise that there will be uncertainty in evidence-based librarianship. It will be unusual to find a piece of research that totally answers your questions or mirrors exactly the change you are investigating for your library. However, despite the potential gap in available research, critical appraisal still contributes in valuable ways to the change process.

“Critical appraisal can:

- Reduce uncertainty;
- Allow you to focus on important issues;
- Help unravel complex problems;
- Harness group perspectives” (Booth & Brice, 2004 p. 108)

After critical appraisal you will be better equipped to make decisions about implementing
changes in your organisation.

“The most common way that librarians apply evidence is through an improved understanding of the issues”. (Koufogiannakis & Crumley, 2004 p. 125)

We were unable to draw the conclusion that the appraisal tool used by the club is a major barrier to conducting evidence-based practice or influencing decision-making with colleagues. Further investigation will need to be done regarding discovering what these barriers are. It may be the lack of published evidence or the lack of relevance of the literature that is published or other factors entirely. (Genoni, Haddow, & Ritchie, 2004)

The last point to note is that the process of evidence-based practice doesn’t end with the changes you may decide to implement. Step 5 is to evaluate the changes you have made as a result of your investigation. If you evaluate your changes in a rigorous way and publish or present your findings at a conference you will be contributing to the body of knowledge and may be helping others to practice evidence-based librarianship.

Acknowledgments

Thanks to all the Journal club members and special thanks to those who completed the survey.

Booth, A. (2007). Who will appraise the appraisers? The paper, the instrument and the user. Health Information and Libraries Journal, 24, 72-76.