

***Fusion or confusion:
challenges in applying
critical appraisal methods
to health librarianship***

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Evidence based librarianship is



“an approach to information practice that promotes the collection, interpretation, and integration of valid, important and applicable user-reported, librarian-observed and research-derived evidence. The best available evidence moderated by user needs and preferences, is applied to improve the quality of professional judgements”.



Why aren't we doing it now?

- The profession?
 - librarians place a great emphasis on anecdote and experience
- Lack of evidence base?
 - Paucity of studies with transferable results impacting on daily practice
- Lack of skills and techniques?
 - Critical appraisal and research design



The library literature

“The library literature is littered with the attempts of individuals to address identifiable research needs. Unfortunately the heterogeneity of the resulting papers makes it difficult to draw any comprehensive conclusions” [Hooke, 1999]

Evidence Based Practice Process



- Define problem
- Find evidence
- **Appraise evidence**
- **Apply results of appraisal**
- Evaluate change
- Redefine problem

Critical appraisal



- Validity - are the results sound?
- Reliability - what are the results?
- Applicability - will the results help me?
- Critical appraisal uses **intrinsic** (design etc) **not extrinsic** (author, journal, institution) factors

Qualitative Systematic Review: Barriers and Enablers in Critical Appraisal Training



Objective:

To characterise the principal barriers and enablers in the training and subsequent implementation of critical appraisal skills, knowledge and behaviour

The review is intended to operate at three levels:

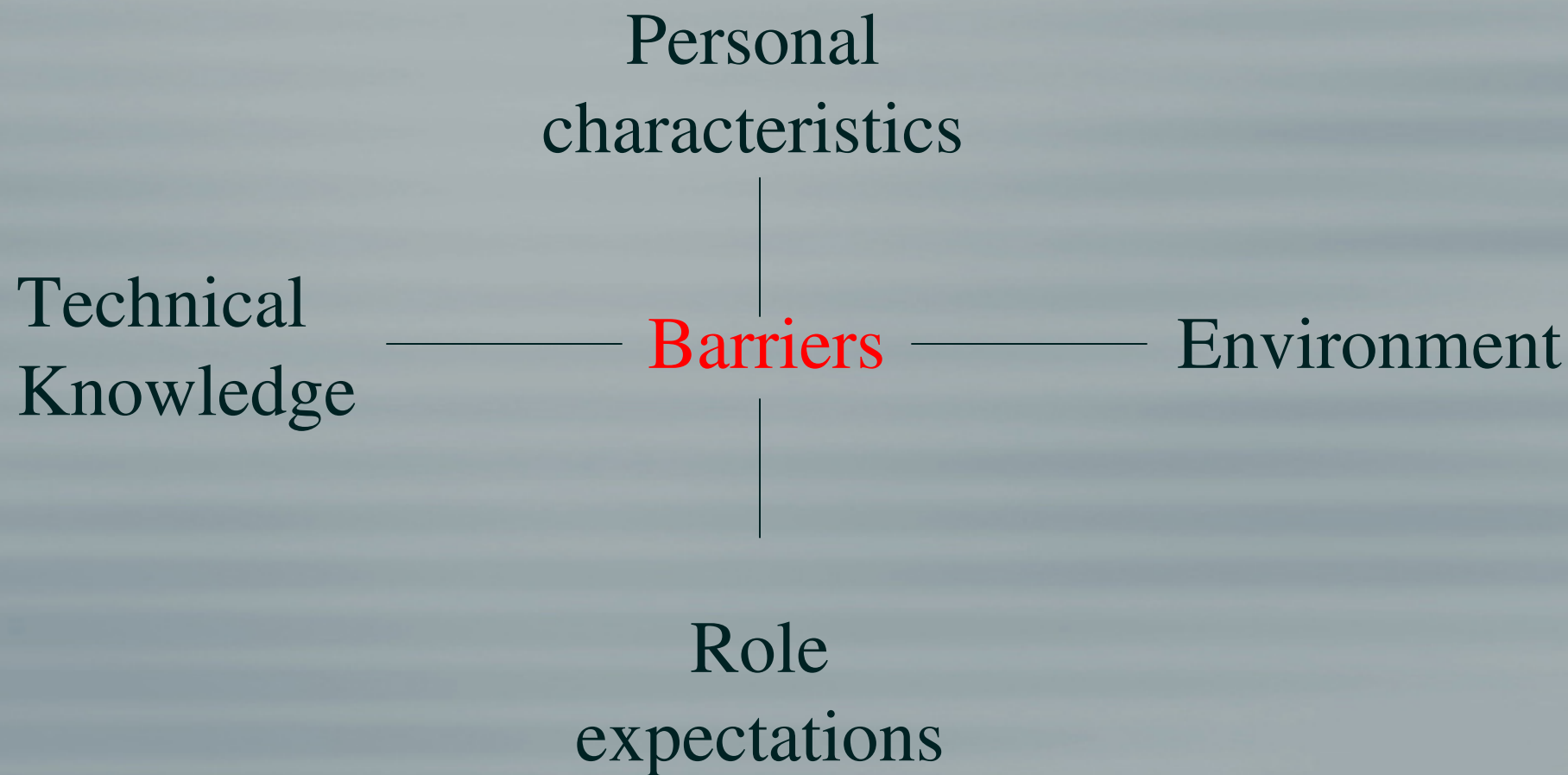
- Lessons for health professionals in general
- **Lessons specific to health librarians**
- Lessons that may be transferable to librarians working in other sectors



Review methodology

- Search strategy
- Literature sources
- Quality appraisal
- Data extraction
 - Barriers or enablers identified from multiple studies (review-level evidence) and single studies, subdivided by experience, observation and perception
- Data synthesis
- Dissemination

Intervening Variables - Librarians and Critical Appraisal





Personal Characteristics

- Lack of confidence
- Individual interest/agenda
- Not accepting of change



Personal Characteristics

“confidence appears to decline after initial training, indicating that it is only *after* training that some realise that critical appraisal in practice may be more difficult than it seemed at first”

“students tend to cope with statistics using avoidance coping strategies” [Devonport et al., 2003]

“in the absence of partnerships librarians feel their professional expertise may not be recognized or appreciated” [Murphy, 2000]

“low confidence corresponds with poor performance” [Lane & Lane, 2001, Milton et al., 2003]

Technical Knowledge



- Research Design
- Statistics



Technical Knowledge

“Levels of critical appraisal skills training vary”

“Students find statistics difficult” [Lane et al., 2002]

“very few information professionals have undergone the intensive generic workshops to prepare them for facilitating the development of appraisal skills”. [Booth & Brice, 2002]

“their medical terminology knowledge was inadequate” [Cimpl, 1985]

“knowledge gaps ... particularly in the areas of study design and statistical methods” [Scherrer & Dorsch, 1999]



Role Expectations

- Librarians are exclusively literature searchers
- Librarians are library-based
- Traditional characteristics of the role of librarians, intra- and inter-professional
- Difficult nature of the new roles and subsequent work involved



Role expectations

“Even some veteran librarians felt uncomfortable with the new roles they were being asked to assume: teaching EBM skills, quality filtering of literature, and participating in journal clubs and morning report”. [Scherrer and Dorsch, 1999]

“we continue to not regard ourselves as a research-orientated profession” [Grant 2003]



Environment

- Lack of time/workload
- Detached from clinical environment
- Within an excluding organisational environment
- Availability, level and quality of evidence base
- Perceived research-practice gap



Environment

“This survey suggests that the major reasons why CLs (Clinical Librarians) might not routinely construct fully appraised search results are lack of time and clinical knowledge”. [Ward, 2005]

“problems were noted in gaining access to a relevant resource base” [Booth & Brice, 2003]

“currently there is no single, freely available source in which to find pre-appraised articles about librarianship” [Crumley & Koufogiannakis 2002]

Enablers - Librarians and Critical Appraisal



Self efficacy



Training



Structure &
Resources



Vision &
Marketing



Self Efficacy



- Not needing to “know-it-all”
- Confidence in the clinical setting



Self-efficacy

“The intangible rewards of working with other librarians, medical residents, and faculty were felt to be real and significant” [Scherrer & Dorsch, 1999]

“ for librarians to feel comfortable practising EBL they need to know that it is acceptable to discover holes in the literature, but still be able to make decisions based upon their experience and the availability of research” [Crumley & Koufogiannakis 2002]



Self efficacy

“self-efficacy is affected by ‘performance accomplishments’ (trial successes), vicarious experience (modelling of activities), verbal persuasion (suggestions, self-instruction) and emotional arousal (relaxation, biofeedback)”
[Urquhart et al, 2005]

Training



- CriSTAL style programmes
- “Statistics for Petrified Librarians”
- Multi-disciplinary training
- Blended learning/mentoring

Training



“Continuing professional development (CPD) opportunities (e.g. in basic anatomy and physiology, research methodology and critical appraisal) could influence change in this respect....The training needs identified by respondents could form the basis for the development of training packages for CLs and encourage a change in opinion concerning the provision of evaluated search results”. [Ward, 2005]

“Sustained support is necessary for critical appraisal skills training - one-off training does not seem sufficient to ensure vocational trainees gain confidence” [Urquhart, 2005]

Training, cont....



“The focus group set into action an interdisciplinary professional program to provide librarians with a basic foundation in these skills Several interventions were initiated to accomplish these objectives: a summer series of EBM professional development programs was scheduled; an EBM round table was established to which all librarians, affiliated hospital librarians, and several representatives from the College of Medicine were invited; a mentoring system with particular emphasis on library residents was set in place; and formal continuing education was encouraged”. [Scherrer and Dorsch]

Visioning and Marketing



- Modelling of librarian EBHC roles e.g. at EBHC Workshops
- Health Expert Advisory Group (UK) and MLA (US) Research Statements
- The Informaticist/ Clinical Librarian / Information Specialist in Context
- Evidence Based Information Practice - modelling what we teach



Visioning and marketing

“Davidoff’s introduction of the concept of the ‘informationist’ has opened the debate about the new roles that health librarians/health information professionals could (some would say *should*) take on”

“Informationists .. would function as members of health care teams, providing information at the point of care. While not necessarily defined as librarians, informationists would learn “the practical, working skills of retrieving, synthesising, and presenting medical information and the skills of functioning in a clinical care team. These skills are remarkably similar to ones proposed in the health sciences library literature”
[Scherrer & Dorsch]



Visioning and marketing

“ a proposed solution for this problem is the Information Specialist in Context (ISIC). ISICs are individuals with thorough background knowledge in clinical medicine, laboratory research, public health, or other healthcare/research specialty who are also versed in research methodology, critical appraisal of the literature, and information seeking” [Guise, 2003]

Visioning and marketing, cont



“EBM brings clinical librarians into full participation in the problem-solving process. It expands the role of the librarian from defining the question and searching for relevant articles, to include critically appraising the literature in terms of study design, statistical analysis, and applicability to the individual patient. Librarians become integral members of patient care teams”. [Scherrer & Jacobson, 2002]

Visioning and marketing, cont



“A useful spin-off from librarians acquiring critical appraisal skills within their own professional context might be that they would then feel more able to facilitate similar sessions with multi-disciplinary groups within their organisation” [Booth & Brice, 2003]



Structures and Resources

- Legitimisation of reading time
- Research Into Practice in Job Descriptions/ Staff Appraisal
- **Journal clubs**
- CATS/ Best Bets
- Participation in Ward Rounds



Structure and resources

“Implementation of evidence-based change requires development of new skills. Journal clubs can facilitate this development with typical goals including scholarship, socialization, personal growth, critical thinking and attempting to keep up with the current literature” [Straus et al, 2000]

“Librarians and GP trainers need to work together to ensure that opportunities for continued support in critical appraisal skills are taken up”. [Urquhart, 2002]

Structure and resources, cont....



“Suggested solutions involve use of tools, worksheets and glossaries of terminology to enable participants to get the most from learning possibilities in the workshop”. “checklists, which are becoming increasingly popular, can be useful tools for critically appraising the evidence.....the appraisal tool, together with the workshop format, helped participants improve their understanding of research methods and their ability to use research to aid their decision making” [Booth and Brice, 2004]

“that this effort was administratively supported also contributed to its successthis co-operation addressed the issue of deficiencies in the background of the librarians, especially in the area of statistics” [Scherrer & Dorsch, 1999]

Structure & resources, cont...



“Attendance at morning report exposes the librarians to medical terminology, plunges them into the same learning environment as the residents, and introduces them to complex patient histories. Hearing unfamiliar medical terminology forces librarians to learn new vocabulary to understand clinical discussions better. Seeing residents challenged to make diagnosis and treatment decisions under the various pressures of morning report increases librarians' understanding of the environment in which physicians work”. [Scherrer & Dorsch, 1999]

Issues



- Findings relate largely to librarians appraising medical literature in their support of EBHC rather than of their own evidence base
- Less data available to populate the higher levels of evidence as defined by our coding framework
- Poor reporting of studies
- Fragmentation of evidence base
- Lack of self-efficacy the biggest barrier?



Next phase

- Is there greater homogeneity between health professionals and health librarians (“sector homogeneity”) or between health librarians and other librarians (“professional homogeneity”)
- Answers to this, and other, issues will help in the design of critical appraisal programmes for health librarians and for the library profession in general.