

Librarian Involvement in Systematic Reviews at Queen's University: An Environmental Scan¹

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Abstract: Introduction: Systematic reviews are a growing research methodology in many fields, particularly in the health sciences. Many publishers of systematic reviews require or advocate for librarian involvement in the process, but do not explicitly require the librarian to receive co-authorship. In preparation for developing a formal systematic review service at Queen's, this environmental scan of systematic reviews was conducted to see whether librarians receive co-authorship or other acknowledgement of their role in systematic reviews. **Methods:** A search of the Joanna Briggs Database and both Medline and PubMed for systematic reviews with at least one Queen's-affiliated author was completed. These were classified based on the level of acknowledgement received by the librarian involved in the search into three groups: librarian as co-author, librarian acknowledged, and unclear librarian involvement. In instances where the lead author was Queen's affiliated, these were also categorized by their primary academic department. **Results:** Of 231 systematic reviews published with at least one Queen's affiliated author since 1999, 31 listed a librarian as co-author. A librarian received acknowledgement in a further 36 reviews. The School of Nursing published the most systematic reviews and was most likely to have a librarian as co-author. **Discussion:** Librarians at Queen's are actively involved in systematic reviews and co-authorship is a means of valuing our contribution. Librarians appear to be more likely to achieve co-authorship when they have advocated for this role in the past. Success varies according to the cultural norms of the department.

Introduction

Systematic reviews are a growing research methodology in many fields, not the least of which includes the health sciences. For many years, researchers have seen the importance of putting existing evidence in a more synthesized format, not only to guide medical decision making, but also to guide research funding and develop tools to better educate the public on standards of practice. The Canadian Institutes of Health Research (CIHR) defines knowledge translation as “a dynamic and iterative process that includes the synthesis, dissemination, exchange and ethically sound application of knowledge to improve the health of Canadians, provide more effective health services and products, and strengthen the healthcare system” [1]. This definition encapsulates much of why systematic reviews are becoming a recognized research methodology and why they are playing a growing role in the funding of research and in academic publications.

As early as 2005, Sampson and McGowan [2] were advocating for librarian involvement, and indeed, co-authorship on systematic reviews. They are certainly not alone. The Cochrane Collaboration has long recognized the importance of including a librarian as part of the review. In the Cochrane manual the trials search coordinator's role is described as

... responsible for providing assistance to authors with searching for studies for inclusion in their reviews. The range of assistance varies according to the resources available to individual CRGs [Cochrane Review Groups] but may include some or all of the following: providing relevant studies from the CRG's Specialized Register (see Section 6.3.2.4 for more detail), designing search strategies for the main bibliographic databases, running these searches in databases available to the CRG, saving search results and sending them to authors, advising authors on how to run searches in other databases and how to download results into their reference management software (see Section 6.5) [3].

The manual also explicitly states who to contact when a trials search coordinator is not available: “If a CRG is currently without a Trials Search Co-ordinator authors should seek the guidance of a local healthcare librarian or information specialist, where possible one with experience of conducting searches for systematic reviews” [3].

The importance of including a librarian as a full member of the research team was reinforced with the release of The Institute of Medicine's *Finding What Works in Health Care: Standards for Systematic Reviews* in 2011. Standard 2.1 states that a systematic review group should “Establish a team with appropriate expertise and experience to conduct the systematic review”, and that specifically standard 2.1.3

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should “Include expertise in searching for relevant evidence.” Standard 3 outlines specifically what form the search should take: “Conduct a comprehensive systematic search for evidence” which includes “3.1.1 Work with a librarian or other information specialist trained in performing systematic reviews to plan the search strategy” and “3.1.3 Use an independent librarian or other information specialist to peer review the search strategy” [4].

Other organizations have concurred with the importance of working with a librarian on systematic reviews. The Tufts Evidence Practice Center, a group of expert reviewers who voted on the various standards and provided commentary on their applicability, working under contract for the Agency for Healthcare Research and Quality produced a white paper that agreed 100% that expertise in searching was critical. A further 85% of those on the committee agreed that it was essential this task was performed by a librarian [5]. The Joanna Briggs Institute, a systematic review organization based in Adelaide, Australia, with which many universities have a partnership, also states in its manual: “authors should always seek the advice of a research librarian in the construction of a search strategy” [6]. This paper seeks to explore how closely researchers at Queen’s were heeding the advice of systematic review publishing agencies and guidelines.

Methods

To better prepare for a potential systematic review service offered by Queen’s University health sciences librarians, the author conducted an environmental scan of researchers at Queen’s performing systematic reviews. This scan also helps to gauge demand for the service and provides clues as to where systematic reviews are going in future. A search of the Joanna Briggs Database and PubMed was based on the systematic review search initially developed by Montori et al. [7] and modified by Rethlefsen et al. [8]:

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(search*[tiab] OR meta-analysis[Publication Type] OR meta-analysis[tiab] OR MEDLINE[tiab] OR (systematic[tiab] AND review[tiab] OR systematic[sb] AND (Queen’s[ad] OR Kingston General Hospital[ad])
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The databases were chosen because of Queen’s University’s affiliation with the Joanna Briggs Institute and because initially the intent was to offer the systematic review service to faculty in the health sciences only. Because the Montori and Rethlefsen search strategy has been published in two previous peer-reviewed publications, it was felt no further review of the search was needed. The search was conducted on Friday, 13 November 2015. This revealed 463 potential systematic reviews meriting further investigation published by Queen’s authors, or authors who listed their primary affiliation as Kingston General Hospital, the largest teaching hospital affiliated with Queen’s. These citations were exported into EndNote software. Of these, 231 articles were systematic reviews, and the remaining 232 articles were some other type of article such as summaries of reviews or articles about systematic review methodology. Articles were identified as systematic reviews if the author explicitly stated a systematic approach to searching the literature was

undertaken or if it could be implied by the large breadth of search terms and bibliographic databases used in the search, indicating an attempt to be comprehensive in the search. As the search only included published systematic reviews, ethics approval was not required.

From this set of 231 articles, all reviews were examined to determine if a librarian was involved in the search process. These were placed into three categories: librarian as co-author, librarian acknowledged (either in the body of the text or in the acknowledgements section), and librarian involvement was unclear. Librarians were identified if they could be determined by listed academic credentials or by job title in the acknowledgements section or body of the text. In some instances, they were identified by name recognition. This was feasible given the small number of librarians employed at academic health sciences centres in Canada, as they could often be identified by name [9].

Because of the fluid nature of academic appointments and the number of papers authored or co-authored by students, reviews published between 2013 and November 2015 were also categorized by whether the lead researcher had Queen’s affiliation or another institution, and, if determinable, the department at Queen’s the researcher was affiliated with. The intent of this categorization was to determine which researchers and departments would best be approached for conducting a further needs assessment and where we ought to spend our efforts in promoting and developing the service once it is developed.

Results

A review of which librarians are receiving co-authorship listed 31 publications with a librarian co-author. A full list of these publications can be found in [Supplementary Appendix A](#). Of these the majority (22 of the 31 publications) were papers where the librarian was employed by Queen’s Library at the time of the publication. Also, a majority (19 of the 31 publications) were published by either the current or former nursing liaison librarians, which demonstrates the tendency of the School of Nursing to grant co-authorship to librarians. Of the systematic reviews where librarians received co-authorship, 23 out of 31 had a nurse as the lead author. A full list of papers with librarians as authors can be found in [Supplementary Appendix A](#).

In the second category, librarians were acknowledged by name either in the acknowledgements section of the paper, or where a librarian or information specialist was acknowledged in the body of the paper, usually by description of position. This was done in 36 reviews. Some examples of how librarians received acknowledgement in the acknowledgements section include:

The author is grateful to Jessie McGowan, MLIS, AHIP, Senior Information Scientist, Institute of Population Health/Ottawa Health Research Institute, Trials Search Coordinator, EPOC (The Cochrane Collaboration) for the design and execution of the electronic searches [10].

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From the Cochrane Injuries Group we wish to acknowledge... Karen Blackhall (electronic search strategies). From the Cochrane EPOC group, we thank Alain Mayhew and Michelle Fiander (electronic search strategy) [12].

The authors are grateful to Jessie McGowan, MLIS, AHIP, Senior Information Scientist, Institute of Population Health/Ottawa Health Research Institute, Trials Search Coordinator, EPOC (The Cochrane Collaboration) for the design and execution of the electronic searches [13].

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The authors acknowledge... Linda Schoop, MLS, Library Scientist, Purdue University Calumet [16].

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Authors thank... Gina Matesic, MA, MLIS, MEd, University of Toronto, Giulia Consiglio, BSc, University of Toronto, Joanna Bielecki, BSc, MIST, University of Toronto... [18]

The authors also thank Trish Johns-Wilson at the University of Ontario Institute of Technology for her review of the search strategy [19].

In one instance, multiple librarians were acknowledged, reflecting the complexity of the search and the use of peer review of the search strategy. Stevens et al. [20] thank

Shona Kirtley for information regarding the EQUATOR network search strategy for reporting guidelines, Andra Morrison for peer reviewing the search strategies developed for this review, Becky Skidmore for designing and conducting literature searches.

Acknowledgement of the involvement of a librarian in the body of the text often did not include either the librarian by name or further acknowledgement of the librarian in the acknowledgements section. Examples of this include:

A qualified librarian searched the following databases:... [21]

A systematic literature search was performed using the MEDLINE (1966 to October 2006) and EMBASE (1980 to October 2006) databases with the assistance of a librarian with expertise in electronic searches [22].

Collaborative efforts between clinician specialists and research librarians resulted in several iterations and refinements of the search [23].

We conducted a systematic search of MEDLINE, Embase, CINAHL, and CENTRAL from 1 January 1990 to 28 May 2014, guided by a librarian, and using a combination of keywords and medical subject headings with no language restrictions [24].

The search strategy was developed by a team of experienced librarians [25].

There were two examples where the librarian was acknowledged both in the body of the text and the acknowledgements

section. One example where this was done was Piteau et al. [26] where the body of the text read “The main search strategy... was developed by an experienced librarian.” The acknowledgements section then reads: “The authors gratefully acknowledge the following individuals for their contributions to this project: Margaret Sampson, MLIS, PhD, AHIP (search services)” [26]. Another example was Wilcox et al. [27] who wrote “searches were performed with the aid of an experienced information specialist” in the body of the paper and in the acknowledgements section wrote: “We thank Hannah Wood, Assistant Librarian, London School of Hygiene and Tropical Medicine, University College London, for her assistance in the literature search”.

Where librarians were neither acknowledged nor given co-authorship, the passive voice was often used to describe searching. For example:

The following databases were searched for articles published between 1980 and September 2014: Embase, MEDLINE, CINAHL, the Cochrane Central Register of Controlled Trials and the Cochrane Database of Systematic Reviews [28].

Of the 91 systematic reviews published by Queen’s authors between 2013 and November 2015, 45 listed the lead author as having Queen’s affiliation. The greatest number of these by department, six, were published by authors in Nursing. However, many of the reviews were published outside the health sciences, with the next largest department represented being Kinesiology and Health Studies, with four reviews. In five of the reviews, the lead author could be identified as a student in Medicine (three in internal medicine, two in family medicine) showing the popularity of the systematic review as a method for student projects in that discipline. The remaining departments include Cancer Research (2), Cardiology (2), Mathematics and Statistics (1), Neurology (1), Ophthalmology (2), and Psychiatry (2). Only the reviews in Nursing recognized the librarians at Queen’s as co-authors, with five out of the six doing so.

Discussion

One limitation to this study is that not all librarians were easily identifiable. In some instances the librarian as author may be missed because they are identified only with a department in which they are embedded or because they have a PhD as a terminal degree. Further research should seek to identify doctorally trained librarians or researchers whose primary affiliation is not with the library. This paper also did not compare the quality of searches reported by librarian-authored and nonlibrarian-authored papers, although this should be examined in future research.

This scan of librarians as authors or contributors demonstrates that Queen’s has done an excellent job of advocating for authorship within the School of Nursing. Librarians at Queen’s are far more likely to receive co-authorship than simply acknowledgement in this department, although in some instances of acknowledgement it is unclear who has performed the search. This may be a result of the influence of early adopters of systematic

review methodology in the school of Nursing, or the role the Joanna Briggs Institute has as a collaborating centre in the school. Because the Joanna Briggs Institute has traditionally used qualitative methods for reviews, this may place higher value on the importance of a search. Nursing is also a small faculty, with only 24 full-time tenure/tenure-track faculty. This may mean that faculty norms are more easily adopted. In addition, at Queen's the Nursing liaison librarian is not responsible for any other faculty departments and serves just one outreach location, for a relatively high librarian–faculty ratio. Medicine has a much larger number of full-time faculty (approximately 450) and part-time faculty (approximately 1200), but only 2.5 full-time equivalent liaison librarians. Although all the librarians in the health sciences library share their duties, it makes it difficult to provide the same level of service consistently to the school and for cultural norms to spread through the department. In most instances the librarian is employed by the same institution as the lead author, but this was not always a Queen's author.

Conclusion

Conducting an environmental scan of systematic reviews can provide important insights into the development and promotion of systematic review services at a university or other research institution. It can also provide a view of how research networks are formed. Examining which librarians are performing systematic reviews for our researchers will help to target departments with a higher need for librarians with systematic review expertise, ensure workload within the library is distributed equitably, and provide information about potential collaborators, both internal and external to the university. Future research might explore the nature of these research networks to better provide service to these interconnected groups. As librarian acknowledgement and co-authorship appears to vary by department, librarians can influence this decision by presenting their results in a way that encourages authorship, such as by writing the Methods section when delivering the results, or actively requesting co-authorship when initially meeting with the review team. This paper did not explore the quality of the search strategies and whether this results in better reporting of search strategies, this has been done previously by others [8, 29]. Although more remains to be done in this area, future research may consider whether having a librarian as co-author results in a more highly cited systematic review or in having the review published in a journal with a greater impact factor.

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