RESEARCH ARTICLE / ARTICLE DE RECHERCHE

Librarian Support for Researchers in Ontario Hospitals

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Abstract: Introduction: The purpose of this paper is to investigate the extent to which Ontario hospital librarians and library resources, support research and explore the librarians' participation in research capacity building within their institutions. **Methods:** 53 potential participants received via email, a 16-question web-based questionnaire (SurveyMonkey™). **Results** The response rate was 60%. Librarians have supported anywhere from 10 or less to 76 or more researchers in the past 12 months. Librarians supported a variety of scholarly research outputs, assisting research authors with journal articles being the most frequently supported activity. The top 3 library resources used to support researchers were licensed electronic journals, print collections and expert librarian searches. One of the reported ways librarians received training to better assist researchers was via online continuing education. **Discussion:** As other studies have reported, there was a predominance of support for literature studies including literature reviews and systematic reviews. It was surprising to find that some librarians reported that they had all the databases or resources they needed to support research. Shrinking library budgets in Ontario hospitals has been the trend for several years, so it was unexpected that some respondents felt they had sufficient resources to support research activities. It was alarming that 79% of respondents reported not having access to all the databases and resources they needed to conduct research. Lack of access to databases or online resources may have a negative effect on the quality of research support librarians provide. Raising the awareness of the role of librarians in supporting researchers in the hospital setting can inform the health sciences librarians' professional practices and provide evidence of the library's participation in building research capacity in the organization.

Introduction

Hospital-based research is becoming increasingly important in the Ontario healthcare system due, in part, to the emphasis on the provision of evidence-based or evidence-informed services.

Library research training may not be adequate or a required component for all clinician trainings in all institutions; hence, there may be a need for research support and capacity building in healthcare.

The role and expertise of the hospital librarian is well-suited to support organizational research [1-6]. Hospital librarians typically support the research process in traditional ways, doing literature searches, providing articles, resources and expertise as needed. A scoping review found that research support provided by health sciences librarians was predominantly for

systematic review support, though there was an emerging role in data management support [7]. Another study described a team of clinicians and librarians who created an online workspace using web 2.0 tools for use by researchers within their hospital. The library page on this website provided researchers with helpful instruments and offered them a document repository to share their results, teaching materials or clinical protocols [8]. In another study, the librarians supported clinical researchers by establishing an institutional-wide tracking system to monitor research publications and scholarly activities [9].

Beyond direct assistance with research, the health sciences librarian has the opportunity to support research capacity building of the hospitals by offering library research training to hospital staff. Through these workshops or online training, librarians provide

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appropriate skills and confidence to apply those skills in their research projects [10]. While there is little literature describing such programs, one study conducted in a teaching hospital described the implementation and outcomes of a program aimed at improving the scholarly productivity of hospital staff [9]. The program included librarian-led instructional workshops and researcher training on topics like searching key health databases and using bibliographic management citation software. Upon completion of the program, they found an increase in the usage of research databases and webpages, as well as improved tracking of research projects due to the new tracking system implementation as part of the training program [9]. Health sciences librarians have the skills and capacity to provide varied and meaningful support to organizational research activities; however, the extent to which this expertise occurs in hospital library services remains unknown.

Interestingly, studies have shown that fewer than 50% of health science libraries evaluate their services, with a scoping review reporting that only 25 of 60 studies included in the study mentioned evaluation [7]. Additionally, a systematic review of the effectiveness of librarian provided services in healthcare found no studies of librarians providing direct services to researchers and patients in healthcare settings [11]. While evaluation is poorly reported in the literature, it remains unknown whether these reports reflect the evaluation of hospital library research services in practice.

Hospital librarians have the expertise to become an integral part of the multidisciplinary research team to support evidence-based healthcare and publication activities and provide practical skills training. As discussed above, the literature is scant and the role of hospital librarians, including research support, training, and evaluation of services, is poorly understood. Therefore, this study investigates the extent to which Ontario hospital librarians and library resources support researchers and describes the librarians' participation in research capacity building within their institutions. The objectives of this research were:

1. To determine the extent and variety of activities performed by hospital librarians to support researchers and research capacity building in their institutions;
2. To identify the specific scholarly research outputs librarians support; and

3. To identify specific library resources provided by hospital librarians to assist researchers.

Methods

This study used a descriptive exploratory study approach with a structured 16-item questionnaire. We chose an online questionnaire survey instead of telephone or face-to-face interviews. This approach is the most appropriate given time and monetary constraints. The institutional research ethics board approved this study. We advised respondents in the preamble to the questionnaire that returning the questionnaire implied informed consent. The questionnaire was administered online through SurveyMonkey™ program by sending a link to the registered e-mail of 53 Ontario hospital librarians. The questions sought to investigate activities and services provided to researchers within the hospitals. The questionnaire was originally developed and used in an academic health sciences library and was adapted with permission to reflect the hospital library context [2].

In order to identify and to improve on any ambiguous questions, two hospital librarians from non-Ontario general hospitals volunteered to serve as pre-test participants to provide feedback on the questionnaire and to test the data collection procedure (August 8, 2017 to August 11, 2017). Pre-test participants completed both the questionnaire and a questionnaire evaluation feedback form. After the pre-test 2 questions were deleted and two new questions were added to the questionnaire. We expanded response categories for 5 questions and 5 questions were reworded for clarity.

We created a list of 53 potential participants by identifying Ontario hospitals registered with the National Library of Medicine's DOCLINE® interlibrary loan system. The advantage of using this tool is that in order to participate, a hospital must have an active library service in their facility. Questionnaires were distributed by direct email to managers or directors of libraries with multiple library staff and to solo librarians who may or may not be in a managerial role in Ontario hospitals. As one of the authors, is a solo librarian at an Ontario psychiatric hospital library, we excluded all other Ontario psychiatric hospitals to avoid researcher bias.

Potential respondents had five days from October 16, 2017 to October 20, 2017 to complete the

questionnaire. SurveyMonkey™ was used and data was exported to Microsoft Excel 2010 (Microsoft Corporation, Redmond, WA, USA) for data analysis. It was not necessary to validate data entry as participants completed the questionnaire online through SurveyMonkey™.

The 3 objectives of this study were used to categorize and analyze the data. Frequency tables, and descriptive statistics were used to summarize the data collected. Tables, bar and pie charts were used to demonstrate the survey data where applicable. We conducted all data analyses using SurveyMonkey™.
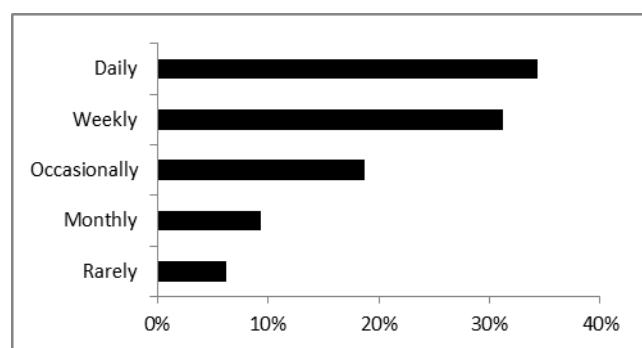
Results

Of the 53 hospital librarians contacted, 32 respondents returned the questionnaire (60% response rate). Twenty-four of the respondents (75%) completed all the questions. The total number of responses to each question varies because some questions were unanswered.

1) **The extent and activities of hospital librarians regarding their support of researchers and research capacity building within their hospitals.**

All 32 respondents reported that they received requests for research support with various frequency; daily (34%), weekly (31%), occasionally (18%), monthly (9%) or rarely (6 %) (Figure 1).

Fig. 1 Frequency of Requests for Research Support (n=32)

Ten respondents indicated their librarians spend 26% to 50% of their time devoted to supporting research. Eight respondents reported spending 25% or less of their librarians' time on research support. Seven reported they spend 51% to 75% of their time and 1
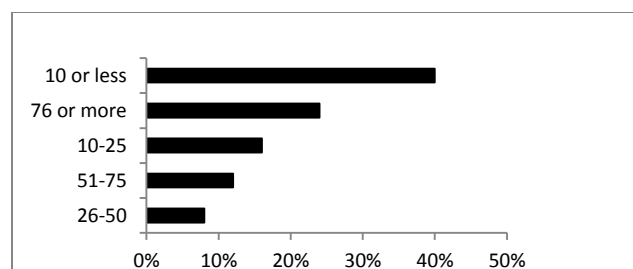
respondent reported spending 76% to 90% on research support (Table 1).

Tab. 1 Per Cent of Librarians' Time Spent Supporting Research (n=26)

Time Spent	25% or less	26% to 50%	51% to 75%	76% to 90%
Responses	8	10	7	1

Ten respondents reported that they have supported 10 or less researchers over the past 12 months. Six respondents reported they supported 76 or more researchers within their hospitals. Four respondents served 10 to 25 researchers. Three respondents supported 51 to 75 researchers and 2 respondents indicated they supported 26 to 50 researchers. (Figure 2)

Fig. 2 Number of Researchers Supported by Librarians in Past 12 months (n=25)
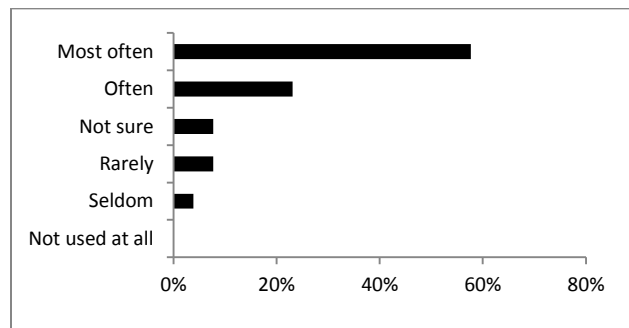

The average number of full-time library staff per hospital whose role requires them to support researchers was 2.03, with a standard deviation of 1.84. The median number of staff is 1.5. The highest and lowest FTE reported is 7.0 and 0.2 with a range of 6.8.

All 32 respondents believed in the importance of librarian support for research. Twenty-five respondents (78.1%) believed support was very important, while 7 (21.8%) believed it was important or somewhat important.
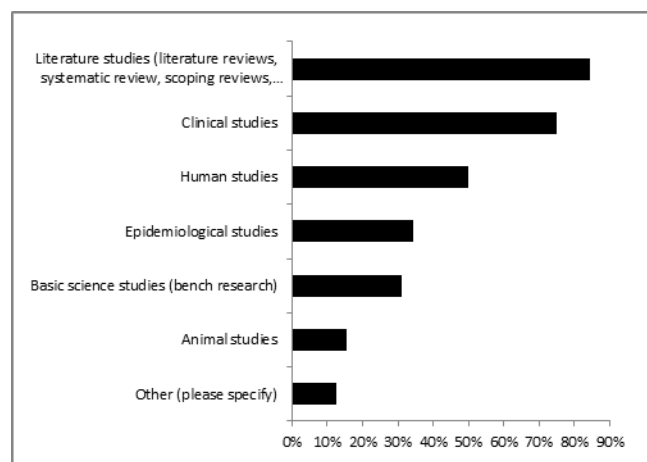
The majority of respondents (80%) reported they often or most often used their knowledge of multiple databases to support the work of researchers. Eleven per cent of respondents indicated they rarely or seldom used multiple databases. Two respondents were not sure of the frequency of use (Figure 3).

Fig. 3 How often does the librarian use knowledge of multiple databases to assist the work of researchers? (n=26)

Type of research performed by 84% of respondents included literature studies, and literature reviews and systematic reviews. Clinical studies are supported by 75% of librarians, 50% support human studies, 34% support epidemiological studies, 31% support basic science (bench research), 15% support animal studies and 12% supported other studies. Other studies included "health profession education", "broad spectrum of nursing and allied health information", and "all of the above as dictated by clinician interests" (Figure 4).

Fig. 4 Types of Research Supported (n=32)

Librarians reported participating in various types of training to better assist researchers. Respondents (86%) used education via online training while 56% of respondents used continuing education via classroom setting. Respondents (73%) also attended conference workshops. Forty-seven per cent of respondents reported they learned through the library science research and publication activities. Forty-three per cent of respondents reported they used online discussion forums. Internal mentors were used by 34% of respondents compared to 21% who were mentored by an external librarian (Figure 5).

Fig. 5 Types of Training for Librarians to Assist Researchers (n=23)

The majority (62%) of hospital librarians do not support researchers who are unaffiliated with their hospital. Some librarians (29%) do support external researchers, but for a fee, while 8% report that they support external researchers at no cost.
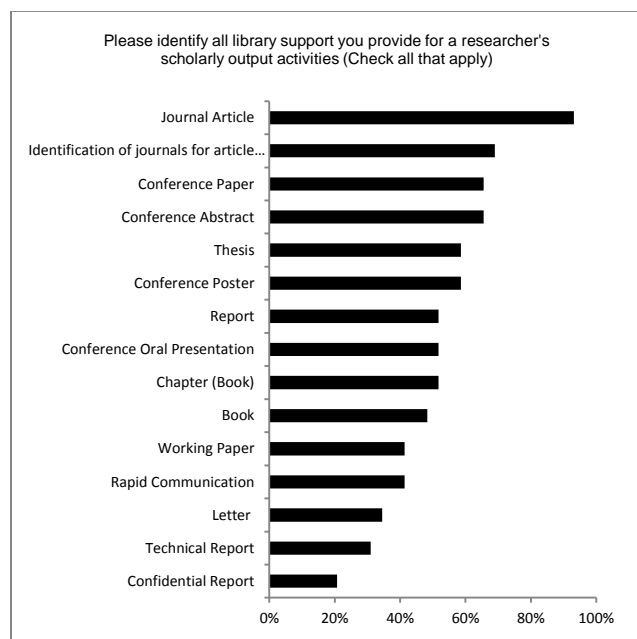
Sixteen hospitals provide financial support to fund research librarian activities while 10 hospitals do not provide any financial support. We defined financial support as funds for librarian training, or attendance at conferences.

When asked if the library provides information to the general public about a hospital's clinical trials, 95% of the 24 respondents who answered this question reported that they did not provide this kind of information. Only 1 respondent replied that they provided the public with clinical trials information.

2) What specific scholarly research outputs do librarians support?

The librarians supported the following scholarly research outputs; journal articles (93%), identification of journals for article publication (68%), and conference abstract or conference paper (65%). The least supported scholarly research outputs included: confidential reports (20%), technical reports (31%), and letters (34%) (Figure 6).
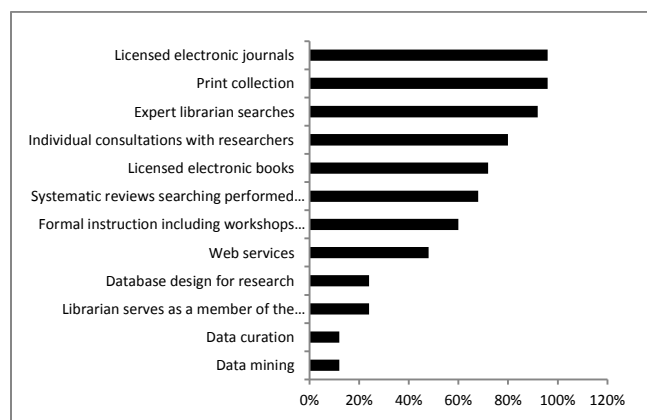
Fig. 6 Researchers Scholarly Outputs Supported by Librarians (n=29)

3) What specific library resources do hospital librarians provide to better assist researchers?

The top 3 library-provided resource supports for research were licensed electronic journals (96%); print collection (96%) and expert librarian provided literature searches (92%). The least-used resource supports provided by libraries were data mining and data curation (12%), database design for research (24%) and web services (48%) (Figure 7).

Fig. 7 Library Resources Supporting Researchers (n=25)

When asked if the library supports specific educational programs or tutorials for researchers, there was a divided response. Among the 24 respondents (out of 32) who responded to this question, 14 (58%) supported educational activities for researchers while 10 (41%) did not.

Only 5 (20%) librarians felt they had all the databases or resources that were needed to support research, and 19 (79%) of librarians did not feel they have all the databases or resources they needed. Nineteen respondents (79%) reported that they have not evaluated the library's research service, and 10 (38%) librarians responded that they have done evaluation of research support services provided by their library.

Discussion

This was the first study to investigate the extent to which Ontario hospital librarians support research. Generally, findings showed that, while not yet pervasive, librarian support for research in Ontario hospitals does exist at various levels of service. This study, however, did yield some unexpected results. Two respondents reported providing support to 26 to 50 researchers over the past 12 months. We would not have expected a hospital librarian to have sufficient dedicated time to support a relatively large number of researchers. It was also unexpected that 2 respondents were not able to indicate how often they use their knowledge of multiple databases to support the work of researchers, suggesting that some librarians are not keeping accurate records of their work. Another interesting finding was that some librarians support external researchers at no cost. Hospital librarians are always looking for ways to generate revenue. Perhaps in the case of supporting external researchers, these people might have been external collaborators with staff employed in the hospital. It was also unexpected to learn that some hospital librarians are not providing specific educational programs or tutorials for researchers. A recent benchmark survey of Canadian health facility libraries found that 29% of librarians reported a decrease in library budgets and 36% reported their budget had stayed the same over the past 5 years [12]. Under this kind of budget constraint, we were surprised to find that 5 respondents reported that they had all the databases or resources they needed to support research.

Similar to previous studies [7] our study found that the majority of projects supported were literature studies, followed by support for clinical studies. This is not surprising as evidence-based medicine is a priority in many healthcare organizations and both systematic reviews and clinical trials are cornerstones of scientific evidence. This study confirmed there was library support for all of the research types listed in our survey.

One disturbing finding was that 79% of respondents reported not having access to all the databases and resources they needed to conduct research. Modern day library research on health sciences topics often requires searching of multiple databases [13]. Lack of access to databases or online resources may have a negative effect on the quality of research support librarians provide. This is possibly related to the ongoing budget pressure felt by hospital libraries across the province, and is also reflective of the lack of an overall provincial or national strategy in terms of database subscription like the models adopted by the National Health Service (NHS) of the United Kingdom [14].

Limitations

One limitation of our study is that we did not distinguish between different types of hospital libraries, as it is natural that libraries of larger academic or teaching hospitals in major city centres would have more research activities, enjoy better resources than their counterparts in smaller community and (or) non-teaching hospitals. This factor might contribute to the variations in how frequently libraries receive research request, how much time librarians spend on supporting research, or how many full time staff libraries have to support research activities.

A possible limitation in questionnaire based surveys involves measurement error [15]. Respondents could provide inaccurate answers because they fear criticism or choose to make the response that they think is desirable to researchers. In order to address this limitation, we advised respondents in the preamble preceding the questionnaire that their responses would remain anonymous and that no answers were correct or wrong.

In regards to the design of our questionnaire, we inadvertently introduced a scale format bias in the third question. We had listed a response category "somewhat important" twice in question 3, which asked, "How important do you think librarian support is for researchers?". As only 2 respondents selected "somewhat important", the bias on this question is minimal.

Conclusion

This research contributes to the field of health sciences librarianship by exploring the hospital librarian's role and the extent of support they provide to researchers within hospital settings across Ontario. This study's findings identified current activities of librarians, the library resources provided to support researchers and variations in services or resources across Ontario hospital libraries. Raising awareness of the librarian's role in supporting researchers in the hospital setting can inform the health sciences librarian's professional practices and provide evidence of the library's participation in the research capacity building of the organization.

Librarians supporting researchers is relevant as it demonstrates the value of hospital librarians, which in turn supports library budget and staffing. Future research could explore the presence of a formal hospital-based research department or institute, and compare it to library support in hospitals without a dedicated research service.

References

1. Cheek FM, Bradigan PS. Academic health sciences library research support. Journal of the Medical Library Association : JMLA. 2010;98(2):167-71. Epub 2010/04/30. doi: 10.3163/1536-5050.98.2.011. PubMed PMID: 20428284; PubMed Central PMCID: PMCPmc2859272.

2. Cheek FM. Research Support in an Academic Medical Center. Medical reference services quarterly. 2010;29(1):37-46.

3. Kiel R, O'Neil F, Gallagher A, Mohammad C. The library in the research culture of the university A case study of Victoria University Library. IFLA journal. 2015;41(1):40-52.

4. Crum JA, Cooper ID. Emerging roles for biomedical librarians: a survey of current practice, challenges, and changes. Journal of the Medical Library Association : JMLA. 2013;101(4):278-86. Epub 2013/10/29. doi: 10.3163/1536-5050.101.4.009. PubMed PMID: 24163599; PubMed Central PMCID: PMCPmc3794683.

5. Olsen HK. Research group librarian–a cooperating partner in research? Liber Quarterly. 2012;22(3):190-212.

6. McIntire ME. Librarians Leap to the Aid of Researchers Whose Funding Will Soon Depend on Open Access. The Chronicle of Higher Education. 2015.

7. Visintini S, Boutet M, Helwig M, Manley A. Research Support in Health Sciences Libraries: A Scoping Review. JCHLA/JABSC. 2017;38(2):64.

8. Montano BS, Garcia Carretero R, Varela Entrecanales M, Pozuelo PM. Integrating the hospital library with patient care, teaching and research: model and Web 2.0 tools to create a social and collaborative community of clinical research in a hospital setting. Health information and libraries journal. 2010;27(3):217-26. Epub 2010/08/18. doi: 10.1111/j.1471-1842.2010.00893.x. PubMed PMID: 20712716.

9. Friedman Y, Sills M. Collaboration: a Simple Recipe for Improving Research Productivity in the Community Teaching Hospital Setting. Journal of hospital librarianship. 2015;15(4):373-85. Epub 2016/02/06. doi: 10.1080/15323269.2015.1079688. PubMed PMID: 26848287; PubMed Central PMCID: PMCPmc4734760.

10. Cooke J. A framework to evaluate research capacity building in health care. BMC family practice. 2005;6:44. Epub 2005/10/29. doi: 10.1186/1471-2296-6-44. PubMed PMID: 16253133; PubMed Central PMCID: PMCPmc1289281.

11. Perrier L, Farrell A, Ayala AP, Lightfoot D, Kenny T, Aaronson E, et al. Effects of librarian-provided services in healthcare settings: a systematic review. Journal of the American Medical Informatics Association : JAMIA. 2014;21(6):1118-24. Epub 2014/05/30. doi: 10.1136/amiajnl-2014-002825. PubMed PMID: 24872341; PubMed Central PMCID: PMCPmc4215058.

12. Ducas A, Demczuk L, Macdonald K. Results of a Survey to Benchmark Canadian Health Facility Libraries. Journal of the Canadian Health Libraries Association / Journal de l'Association des bibliothèques de la santé du Canada; Vol 36, No 1 (2015). 2015. doi: 10.5596/c15-008.

13. Lam MT, McDiarmid M. Increasing number of databases searched in systematic reviews and meta-analyses between 1994 and 2014. Journal of the Medical Library Association: JMLA. 2016;104(4):284.

14. Nice. What is Open Athens? London, UK: NICE: National Institute for Health and Care Excellence; 2018 [cited 2018 January 24]. Available from: https://www.nice.org.uk/about/what-we-do/evidence-services/journals-and-databases/openathens.

15. Dillman DA. The design and administration of mail surveys. Annual review of sociology. 1991;17(225-249).