Evidence Based Library and Information Practice

Article

Rehabilitating the Stroke Collection

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Abstract

Objective - The aim of this project was to complete an analysis of monograph and audiovisual items held in the Central Coast Health Service (CCHS) Libraries and containing information relevant to the treatment of acute stroke. Acute stroke is treated by multidisciplinary teams of clinicians based at two hospitals within the CCHS. The adequacy of the library collection was measured by subject coverage and age.

Methods - The methodology used consisted of three main steps: a literature review; design, administration, and analysis of a questionnaire to members of the CCHS Acute Stroke Team; and an analysis of the libraries' collections. The research project utilised project management methodology and an evidence based librarianship framework.

Results - The questionnaire revealed that electronic resources were by far the most frequently used by participants, followed in order by print journals, books, interlibrary loan

articles, and audiovisual items. Collection analysis demonstrated that the monograph and audiovisual collections were adequate in both scope and currency to support the information needs of Acute Stroke Team members, with the exception of resources to support patient education.

Conclusion - The researchers developed recommendations for future collection development in the area of acute stroke resources. Conducting this project within the evidence based librarianship framework helped to develop library staff members' confidence in their ability to make future collection development decisions, informed by the target group's information needs and preferences. The collection analysis methodology was designed to be replicated, and new specialist groups within the client base of the library will be targeted to repeat the collection analysis process.

Objective

The Central Coast Health Service (CCHS) Library in New South Wales, Australia, provides information services to meet the clinical, research and learning needs of the Central Coast sector (803 beds) of Northern Sydney Central Coast Health (NSCCH). The primary client groups include the CCHS staff (3,665 FTE) and health students based at CCHS. The main site, Gosford Hospital, is a teaching hospital of the University of Newcastle, Australia.

Acute stroke patients treated in the Central Coast Health Service specialist stroke units are seen by a multidisciplinary team of clinicians including doctors, nurses, physiotherapists, nutritionists, speech pathologists, and occupational therapists, collectively known as the Acute Stroke Team.

The hospital library collection is expected to provide adequate resources to support all these specialist areas. Library staff set out to answer the question:

Does the Central Coast Health Service Library's monograph and audiovisual collection, in the context of all information sources currently available, adequately meet the information needs of the multidisciplinary Acute Stroke Teams at Gosford and Wyong Hospitals, as measured by subject coverage, and publication age?

The aim of this small project was to complete an analysis of monograph and audiovisual items providing information relevant to the treatment of acute stroke that are held at the Central Coast Health Libraries.

Literature Review

The research team conducted database searches using all locally available information science and multidisciplinary databases, including Library and Information Science Abstracts (LISA), Emerald, Expanded Academic, ScienceDirect, and ProQuest 5000. In addition, researchers hand-searched several library science journals: Hypothesis, Health Information and Libraries Journal, the Journal of Academic Librarianship and the Journal of the Medical Library Association.

A combination of the following search terms was used in the search strategy:

- multidisciplinary
- interdisciplinary
- library (truncated)
- collection development
- collection assessment

Initially the literature search also included the search terms 'stroke', 'cerebrovascular disease', and 'aphasia'. However when these terms were combined with either 'collection development' or 'collection assessment', no relevant results were obtained.

The literature review also revealed a lack of published material on assessment of a multidisciplinary collection. Although there is a large amount of material in the library and information science literature on collection development, the database searches did not identify any articles that specifically discussed developing or assessing a collection to support a multidisciplinary health team such as the Acute Stroke Teams.

Jacoby et al. developed a collection development methodology to assess print and digital resources for social work. Jacoby's research was useful in formulating the methodology for the Central Coast Health Service project, because social work is an interdisciplinary area of practice, drawing from a wide range of fields. As such, it was a useful model for collection assessment in the multidisciplinary clinical field of acute stroke treatment. Jacoby's research team of liaison librarians used a list of forty-five Library of Congress subject headings they selected to reflect the subject needs of the social work program at their university. (395)

In their article on interdisciplinary collection evaluation, Dobson, Kushkowski, and Gerhard noted that interdisciplinary fields pose particular problems for collection evaluation (282). Because traditional methods of collection evaluation are based on tightly focused subject areas, evaluation methods based on call number analysis may not be suitable for inter- or multidisciplinary fields. For interdisciplinary collection analysis, Dobson's group recommended using keyword and subject headings to identify relevant areas of the collection (282). This use-centred and materials-centred evaluation method was adapted for use by the CCHS research team.

Chu's research on librarian-faculty relations in collection development provided a theoretical background on lateral relations, defined as relationships and communication "in a horizontal layer of an organisation between people who do not share the same vertical hierarchy" (15). This provided a useful model to describe the library staff's interaction with the Acute Stroke Teams while carrying out this project.

Methods

The research team utilised project management principles to ensure successful and timely completion of the project. The CCHS Library uses a standard project methodology for all projects. The methodology sets out the stages required for a project, including identification of fundamental variables (time, cost and performance); stakeholder analysis; scoping the project; identifying the project deliverables; specifying boundaries, constraints, and anticipated outcomes; and constructing a work breakdown structure.

Incorporating the project methodology within the framework of evidence based librarianship (EBL) added to the value of the research. The challenge of mapping the EBL process to the work breakdown of the project methodology was worthwhile, in that it introduced a greater rigour into the standard project methodology.

Standard Project Methodology	Evidence Based Librarianship Framework
Identify and document parameters of the project.	Formulate an answerable question.
Define the scope of the project and perform a literature review.	Search the library and information science literature.
Administer the questionnaire. Identify the libraries' holdings on acute stroke. Analyse the libraries' collections.	Identify sources of evidence.
Analyse the results.	Appraise the evidence.
Develop recommendations.	Apply the evidence to everyday practice.
Document and evaluate the methodology.	Evaluate performance.
Disseminate results to colleagues by preparing a conference presentation or publishing a paper.	Disseminate the results to other librarians.

Table 1: Standard Project Methodology and EBL Framework

In particular, the evidence based librarianship process emphasises the importance of both evaluating performance and disseminating results. For this reason, the collection analysis methodology was documented to facilitate future collection assessment projects. The methodology was designed to be replicated and is freely available to colleagues for evaluation and dissemination.

The methodology consisted of three main stages: the literature review described above; design, administration, and analysis of a questionnaire to Acute Stroke Team members; and collection analysis based on a keyword search of the catalogue.

Questionnaire Design and Administration

A questionnaire was designed and administered to multidisciplinary Acute Stroke Team members to obtain qualitative data on recent information needs and to assist in determining the required subject coverage of monographs and audiovisual items for collection analysis. Ethics permission was not required for this project as it did not involve patients or members of the public. The researchers and Acute Stroke Team leaders agreed that participant confidentiality was not an issue.

The questionnaire was designed with the aim of optimising both the response rate and the usefulness of the information obtained for analysis. The questionnaire was kept as succinct as possible, and consisted of five questions on two pages. The first question reviewed frequency of monograph use compared to other information resources available to the Stroke Team. The remaining four questions covered recent information needs of participants, keywords used by participants for online information searches of resources recommended by participants as being useful in the treatment of acute stroke, and additional comments from participants.

The questionnaire was discussed and demonstrated in person to the Acute Stroke

Team leaders at both Gosford and Wyong Hospitals to ensure the willing cooperation of these key clinicians. Team members provided participants' contact details, and they encouraged the clinicians to participate in the survey. Questionnaires were emailed to team members and follow up email contact was made with participants, encouraging completion of the questionnaire during the second week after initial distribution. Participants were encouraged to contact project leaders with questions about the questionnaire or the project.

The questionnaire results were compiled and entered into an Excel spreadsheet for ease of analysis. The researchers identified common themes in the responses, and they made recommendations for both immediate actions and future initiatives in collection development.

Collection Analysis

The next stage of the project was to compile a list of relevant monographs in the collection using a combination of keywords identified by library staff and questionnaire respondents and terms derived from Medical Subject Headings (MeSH).

The task of identifying items in the collection relevant to the information needs of the multidisciplinary Acute Stroke Teams was challenging. It was not possible to review the holdings within a targeted Dewey Decimal Classification range due to the multidisciplinary nature of acute stroke diagnosis and treatment. Detailed examination of bibliographic records in the catalogue revealed that not all records had been assigned subject headings. As a result, the librarian researchers had to rely on keyword searching to locate relevant items in the collection. A review of chapter headings from the identified monographs prompted the inclusion of a range of keywords based on symptoms and treatment of stroke.
Prior to administration of the questionnaire, CCHS librarians identified items relevant to acute stroke by using the following keywords:

- (stroke or cerebrovascular) and (assessment or diagnosis or imaging or therapy or treatment or rehabilitation or recovery or medicine or nursing or vision or speech or nutrition or psychology or social or cognition or movement or paralysis or ataxia)
- hemiplegia
- apraxia
- aphasia

Utilising participants' responses from the questionnaire, the following keywords were later added, increasing the holdings list considerably:

- (brain and anatomy) or neuroanatomy
- (patient or client) and (education or training)

Some items retrieved from the searches with these keywords were not relevant to acute stroke, and those were not included in the final holdings list. Subjective decision making was required to omit these holdings.

Records identified by keyword searches of the Innovative Millennium catalogue were exported to an Excel spreadsheet. This was time consuming, however, the spreadsheet allowed the librarians a means of providing feedback to participants regarding holdings following completion of the questionnaire. The spreadsheet included the following information about each item: title, author, year of publication, barcode number, call number, and name of holding library.

The listed items were reviewed by year of publication, scope, and subject coverage; results were compared with the holdings of other libraries participating in the shared catalogue. These libraries include several NSW Health System hospital libraries and a university library serving the region's medical, nursing, and allied health students.

The collection analysis methodology was documented to facilitate future collection assessment projects, both within the CCHS Library and in other libraries.

Results

Questionnaire

In total, 17 questionnaires were distributed and 10 were returned, giving a response rate of 58.8%. Questionnaires were returned by each of the specialty groups in the multidisciplinary teams except social workers.

Question 1: Please indicate the type of information resources you use in relation to your work with the Acute Stroke Team. Electronic resources were the resources most frequently used by participants, followed in order by print journals, books, interlibrary loan articles, and audiovisual items. These results suggested that an online resources subject guide for neurology on the library's intranet site would be a useful tool for the Acute Stroke Team members.

Question 2: Please describe your information needs in relation to acute stroke over the last year. (i.e., specific treatment techniques, anatomy and physiology, evidence based studies, refresher information via general textbooks)

The majority of responses related to the specialty skills of team members (for example 'exercises and strategies for management of dysphasia' was most relevant to speech pathologists). However, several respondents identified a range of topics as being of current interest, including evidence based medicine, anatomy and physiology, patient education (visual displays, 3D models, instructor guides), and current treatment techniques. One respondent specifically emphasised that journals were more useful than books and that online resources were particularly useful. Another respondent stated that Internet-based language therapy resources were of particular interest.

Resources Used	**Frequently**	**Occasionally**	**Rarely**	**Never**
Electronic resources	8 (80%)	1 (10%)	1 (10%)	0 (0%)
Print journals	6 (60%)	3 (30%)	1 (10%)	0 (0%)
Books	1 (10%)	5 (50%)	4 (40%)	0 (0%)
Audiovisual items	1 (10%)	3 (30%)	4 (40%)	2 (20%)
Interlibrary loan books	0 (0%)	2 (20%)	6 (60%)	2 (20%)
Interlibrary loan journal articles	1 (10%)	4 (40%)	4 (40%)	1 (10%)

Table 2: Types of information resources used

Question 3: When searching for resources (of any type), what keywords would you choose?

The selected keywords tended to reflect the specialty skills of the respondents. Many of the selected keywords were too specific for use in a general library catalogue search, being more valid for use in bibliographic database searches. This may reflect the respondents' most frequently used information sources (i.e. electronic / print serials in preference to monographs). More respondents identified the term 'stroke' as a keyword, as opposed to the MeSH term 'cerebrovascular accident'. Additional keywords and phrases not previously identified by the project leaders' pre-questionnaire included 'educational tools', 'design of educational resources', 'patient education', 'general anatomy', 'physiology', and 'neuroanatomy'.

Question 4: Please list any specific titles which you feel are valuable in providing information on acute stroke.

The response to this question was limited, with almost half of the respondents not offering a response to this question. Of those that did respond, many suggested titles that were already available in some format within the library collection.

Question 5: Additional comments

Four additional comments were provided by respondents, although six of the ten respondents offered no comments at all. One respondent thanked the librarians for their efforts to provide updated stroke resources. Other comments from respondents included:

- lack of time to pursue educational / non-clinical tasks
- online information resources are most useful
- journals relating to stroke and nutrition are most useful

The questionnaire results helped to identify additional keywords used to analyse the collection. Results also demonstrated that some respondents were not searching the library catalogue effectively, because they recommended purchase of some items already held in the collection.

Librarians developed a feedback package and distributed it to questionnaire respondents. The package included a list of the current holdings identified as relevant to acute stroke; a summary of the recommendations obtained from the questionnaire and collection analyses; and an education package on searching the catalogue by keyword and subject headings specifically tailored to the respondents' needs.

Collection Analysis

Results of the collection analysis indicated that the monograph collection provided broad subject coverage and adequate currency when compared with other libraries' holdings. There was a noticeable gap in the availability of simple and current information targeting acute stroke suitable for use in patient or career education.

Discussion

Use of the questionnaire had several benefits – education of the recipients about the subject; promotion of the library as a valuable resource; and confirmation at a primary level of the broad or narrower focus of subject searching and resource use within the library collection by the Stroke Team.

Originally, the questionnaire was to be administered face to face with participants to allow for questions to be answered

immediately or to provide basic library training, if required. However, after meeting with the Gosford and Wyong Hospitals' Acute Stroke Team leaders, it was evident that this would not be practical due to time restraints on clinicians. The Team Leaders indicated that emailing questionnaires was likely to produce the highest response rate.

The main problem encountered by the researchers was the clinicians' lack of time to complete a questionnaire. This is an ongoing problem for librarians undertaking research with clients working in the health field. The small sample size was determined by the size of the Acute Stroke Teams. While this meant that the researchers were using a sample of convenience, it gave the project clear purpose and focus to work with these multidisciplinary patient-centred teams and provided useful information for the library.

Conclusion

Although this was a small project, the results of the Acute Stroke Team survey and subsequent collection analysis provided valuable evidence on collection development and information needs in the area of multidisciplinary acute stroke treatment. The results indicate that there was some use of print library resources in the area of acute stroke treatment, but that online resources were the preferred format for information access by this client group. There was a noticeable gap in the availability of resources to support patient education.

The following recommendations arose from this project for ongoing collection development in the multidisciplinary area of acute stroke treatment:

- Continue to purchase the latest editions of core neurology texts in print format to maintain the scope and currency of this part of the collection. It is not necessary to increase the total number of print resources.

- Purchase a small number of new titles to provide simple information to support patient information and education in the area of acute stroke.

- Notify Acute Stroke Team members of new library purchases using an email notification system and a link on the Library's intranet site.

- Review access to print and online journals that focus on the subject areas of stroke and neurology, with the aim of increasing access to online resources.

- Include an online neurology resources subject guide on the library's intranet site.

Conducting this project within the framework of evidence based librarianship means that library staff are now confident their ongoing collection development decisions regarding acute stroke resources will be informed by evidence of the target group's information needs and preferences. Although undertaken in a small, specialist area, relevant to a specific team on the hospital staff, the collection analysis methodology was designed to be replicated. New specialist groups within the client base of the library will be targeted to repeat the collection analysis process.

Further evaluation may be possible through feedback from colleagues who choose to use the methodology in their own libraries. Evaluation obtained from the Acute Stroke Team leaders at Gosford Hospital and Wyong Hospital indicated that this project was useful to their teams in increasing awareness of the library and its services. They also learned more about the library

resources available to support clinical practice in the area of acute stroke.

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