

Information and research needs of acute-care clinical nurses

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In the past two decades, scientific and technological developments have revolutionized health care. Nursing is a practice-oriented profession and, according to Miller et al., nursing practice is advanced through the application of nursing research findings [1]. Research and its application in the clinical setting result in improved patient care and provide a strong scientific knowledge base for nursing. However, research findings that are not read and utilized by practitioners are of limited value.

The importance of current information in the clinical setting is recognized by members of the nursing profession, such as Funk et al. [2], Powers [3], and Blythe [4]. Kehoe states, "nurses are now legally accountable for their practice" [5]. In addition, clinical practice grounded in current scientific nursing research has been mandated by the Joint Commission on Accreditation of Healthcare Organizations [6].

Nurses must be able to practice according to current standards and, therefore, must be informed consumers of research findings [7]. To facilitate access to information, a fellowship in nursing informatics was created recently at Massachusetts General Hospital in conjunction with its nursing information systems department [8-9]. The position of director of nursing information systems was established in 1989 with responsibilities for design and coordination of hospital computer systems for patient data retrieval by nurses. In 1992, the fellowship position was created. The assignment would be to study ways in which the computerized system could be used not only for laboratory and record data retrieval but also to access library information.

Massachusetts General now is studying the effect that computerized access to laboratory data, clinical research findings, and information about new skills and techniques has had on nurses' clinical decisions. The researchers are interested specifically in the effect that twenty-four-hour access to current patient information and available research findings at the unit level has on patient-care outcomes and quality-assurance measurements.

REVIEW OF THE LITERATURE

Armstrong and Gessner have reported on the importance of professional reading in keeping nurses informed about technology, research, and patient care [10]. Use of periodicals by staff nurses and clinical nurse administrators was investigated by Vaz, who found that reading was a function of years in practice and size of the hospital in which the staff nurses were employed [11]. Nurses in the beginning or latter parts of their careers and those in small (100-200 beds) hospitals read more than did other groups of nurses. Work by Skinner and Miller focused only on the types of professional journals read [12]. Their study showed that nurses valued journals as a means of keeping up-to-date professionally; other sources of information used by nurses were not investigated.

Research by Stephens et al. also focused on journal-reading practices of registered nurses [13]. Their work revealed that the most frequently read journals are primarily of a clinical or technical nature, with journal popularity varying by educational preparation. The use of journals by directors of nursing services was investigated by Claus and Binger, who reported that directors considered journal reading a necessity for successful nursing administration [14].

Research by Binger and Huntsman, although limited to staff development educators, looked at a variety of resources and their usage [15]. Ninety-six percent of the staff development educators were expected by nursing colleagues to be aware of current information. The primary method used to survey published information was systematic journal scanning (95% of the sample), with fewer than half facilitating their searching by scanning indexing-and-abstracting services.

Corcoran-Perry and Graves investigated the information-seeking behaviors and information needs of forty-six cardiovascular nurses [16]. Findings revealed that information was sought from verbal sources 45% of the time, written sources (including library and reference material) 45% of the time, and technical sources such as computer terminals and cardiac monitors 10% of the time.

Henderson commented that nursing is a practical rather than a "bookish" profession and that nursing research literature is still relatively new and limited [17]. "The immediate question," she writes, "is how to make it available and how to encourage its use in improving nursing practice, administration, and education."

Literature describing the information-seeking behavior of nurses is sparse. Although some of it focuses on what nurses read and whether they use indexing and abstracting services, none of the studies delineate nurses' use of specific types of information sources. For example, to what extent do nurses use print or

electronic databases? Do they find one database more useful than another? To what extent do they utilize the services of the librarian or library? Do they conduct their own library research, or do they request the librarian to do searches for them? How do they stay abreast of current information related to the profession? This paper reports results of a study designed to answer these questions.

PURPOSE OF THE STUDY

The purpose of the study was to determine usage of libraries and information sources by acute-care clinical nurses at two suburban hospitals. The objectives were to identify the ways nurses typically solve their needs for information, examine the role of the library in meeting nurses' information needs, determine how much time they spend reading materials related to the profession and how much they use specific materials to access information, and discover how they keep abreast of the field. With financial constraints affecting all aspects of a hospital's budget, this type of information may prove useful to unit managers, directors of nursing services, and hospital executives in making decisions concerning distribution of nursing reference funds.

METHODOLOGY

Sample and instrument

A questionnaire was developed that requested data about nurses' areas of work, reasons for library use, reading habits, use of specific information sources, and how they rated these sources in terms of importance to the field and to their own clinical and research use.

The questionnaire was made available to all acute-care clinical nurses at two suburban hospitals in northeastern Ohio where one of the investigators is employed, Lake Hospital System, Inc., and Ashtabula County Medical Center. At one hospital, the questionnaires were distributed with paychecks; at the other, they were made available by the unit manager. The research team hoped that distribution of the questionnaires in the job setting would elicit a higher response rate than would a mass mailing, while also reducing the cost of the research project. It was estimated that approximately 200 nurses would be on duty in various shifts during the period under study and would receive questionnaires. A total of 102 usable (completed) questionnaires was returned, for a response rate of 51%. Although this response rate was lower than had been anticipated, the unit managers who have been involved with previous surveys considered it to be much higher than the average response rate.

Table 1
Demographic characteristics of nurses participating in the study

Characteristic	f	%
Age		
20-29	9	8.9
30-39	45	44.6
40-49	31	30.7
50-59	15	14.9
60-69	1	1.0
Total	101	100.0
Years of practice		
5 or fewer	17	16.7
6-10	22	21.6
11-15	16	15.7
16-20	22	21.6
21-25	14	13.7
More than 25	11	10.8
Total	102	100.0
Level of education		
L.P.N.	12	11.8
R.N., diploma	20	19.6
R.N., associate degree	44	43.1
R.N., B.S.N.	23	22.6
R.N., M.S.N.	3	2.9
R.N., Ph.D.	0	0.0
Total	102	100.0
Position		
Staff nurse	82	80.4
Unit manager	6	5.9
Nurse practitioner	1	1.0
Staff education	1	1.0
Patient education	1	1.0
Director of nursing	3	2.9
Other	8	7.8
Total	102	100.0

RESULTS

Demographic characteristics of subjects

The majority of the nurses who participated in the survey were women (ninety-six, or 94% of the total), and seventy-six (75%) were between the ages of thirty and fifty. The average length of service or years of practice in the field was a little more than twelve years. A complete breakdown may be found in Table 1.

Only twelve of the respondents (11.8%) were not registered nurses (RNs). The largest category in terms of professional qualifications was forty-four RNs with an associate's degree (43.1%). None of the RNs in the study had earned a Ph.D.

Eighty-two of the respondents (80.4%) were staff nurses; others included six unit managers, one nurse practitioner, one nurse in patient education, and three directors of nursing. One respondent was both an acting vice president of nursing and a director of nursing; because her permanent position was director of nursing, she was placed in that category.

Information-seeking behavior

Means of identifying and accessing information. Fifty-two of the nurses (51%) reported finding information through discussions with colleagues, forty-six (45%) searched the library catalog by subject, forty-five (44%) browsed the shelves in a subject area, forty-one (40%) consulted an expert or authority, and thirty-nine (38%) consulted a librarian (Table 2). (Respondents could choose more than one answer.)

The most popular abstracting-and-indexing service, used by thirty-eight of the respondents (39%), was the *Cumulative Index to Nursing and Allied Health Literature*. This source and the *AJN International Nursing Index*, which was used by twenty of the respondents (20.4%), accounted for a majority of the use of this type of reference service. *Index Medicus*, MEDLINE, and *Dissertation Abstracts* were used much less frequently.

Library use. Seventy nurses (68.3%) reported using the library to pursue a personal interest in a subject, more than for any other reason. Need for information about a diagnosis was a major motivation for sixty-one (60%) of the subjects (Table 2). Only twenty-five of the nurses (27%) indicated that the libraries of their own institutions met more than half of their information needs, and forty-seven (50%) said their library met these needs 10% or less of the time. A majority of the responding nurses (seventy-four, or 80.4%) conducted their own library research. Only fifteen (16.3%) said they used a health sciences librarian for this purpose; three (3.3%) indicated the "other" response to this question.

Reading behavior. The vast majority of respondents (ninety-two, or 92%) reported reading up to three professional journals regularly, and forty-five (45%) selected the most popular response of "hours" as the time spent per month reading the professional literature (Table 2).

Information sources used

The most popular health sciences information source, used by eighty-one of the nurses (79.4%), was the professional journal, followed by "other nurses," mentioned by sixty-six (64.7%); the card catalog, mentioned by fifty-two (51.0%); films or videos, noted by forty-seven (46.1%); and conferences, used by forty-four (43.1%). Only nine of the respondents (8.8%) used CD-ROM databases, perhaps due to limited availability as much as to personal preference (Table 3).

Regarding resources in the hospital, fifty-eight of the respondents (65.2%) indicated that their major source of information was the unit reference area, and thirty-one (34.8%) said "the medical library."

Table 2
Measures of nurses' information-seeking behavior

Behavior	f	%
Identifying information*		
Discussion with colleagues	52	51.0
Search library catalog by subject	46	45.1
Browse shelves in subject area	45	44.1
Consult expert or authority	41	40.2
Consult librarian	39	38.2
Library catalog	35	34.3
Abstracts or indexes (print format)	26	25.5
Search library catalog by author/title	23	22.5
Citations in other publications	20	19.6
Bibliographies	19	18.6
Book review	17	16.7
Book review sources	17	16.7
Abstracts or indexes (online)	14	13.7
Abstracts or indexes (CD-ROM format)	7	6.9
Using the library*		
For personal interest in a subject	70	68.6
To obtain information about a diagnosis	61	59.8
To obtain information about drugs or administration of drugs	37	36.3
To obtain information about a technique	36	35.3
To obtain information about equipment	17	16.7
Professional journals read regularly		
0-1	50	50.0
2-3	42	42.0
4-5	6	6.0
6-7	1	1.0
8 or more	1	1.0
Total	100	100.0
Hours/month reading professional literature		
0	9	9.0
1-3	45	45.0
4-6	26	26.0
7-9	5	5.0
10-12	8	8.0
13-16	2	2.0
17-20	4	4.0
More than 20	1	1.0
Total	100	100.0

*Because respondents could choose more than one answer, the percentages add up to more than 100.

Among resources in a nonhospital setting, the community library was most likely to be used, cited by forty-six of the fifty-eight nurses who responded to this question (79.3%). A college or university library was cited by twelve (20.7%).

Means of staying current in the field

When asked an open-ended question concerning how they stay informed about current publications and research in their fields, fifty-seven of the respondents (56.4%) cited journal subscriptions, although, as noted earlier, half of the nurses read only one or no journals on a regular basis.

The fact that nurses do not read a variety of journals

Table 3
Health sciences information sources used by nurses

Source*	f	%
Professional journals	81	79.4
Other nurses	66	64.7
Card catalog	52	51.0
Films/videos	47	46.1
Conferences	44	43.1
Colleagues	43	42.2
Pamphlets	33	32.4
Monographs/books	29	28.4
Newspapers	29	28.4
Illustrations	29	28.4
Photographs	24	23.5
Institutional records	20	19.6
Radio/television	19	18.6
Online catalog	13	12.7
Online database	11	10.8
CD-ROM database	9	8.8
Government documents	3	2.9

*Because respondents could choose more than one answer, the percentages add up to more than 100.

regularly may be attributable to the highly specialized nature of their work. Nurses reported receiving most of their information from peers or professional colleagues, a finding that suggests they may interpret "information needed to stay current in their field" as not exactly the same as information needed for daily work. Other methods of staying current mentioned by two or more respondents are presented in Table 4.

Professional conferences were a popular means of staying abreast of the field. In the previous eighteen months, the subjects had attended sixty-five local conferences (e.g., Greater Cleveland Hospital Conference, Nursing Symposium), twenty-seven state-level conferences, twenty-five regional, one national, and four international professional conferences. Twelve nurses (11.8%) reported attending no conferences.

SUMMARY AND CONCLUSIONS

The majority of nurses surveyed used the library on a regular but limited basis to obtain information needed in caring for or making decisions about their patients. A minority indicated that the libraries in their own institutions totally met their information needs. In fact, only 4% depended on the library to stay abreast of new information and developments in the field.

Many of the nurses had their own journal subscriptions, which could account in part for the limited use of libraries and the popularity of the professional journal as the key information source. This finding correlates with the research of Binger and Huntsman, who found that 95% of staff development educators relied on professional journal literature to keep up

Table 4
How nurses stay informed about current publications or research

Means of staying current	f	%
Journal subscriptions	57	55.9
Seminars	8	7.8
Hospital in-service	7	6.9
Library	4	3.9
Conferences	4	3.9
Colleagues	3	2.9
Continuing education classes	2	2.0
Departmental postings	2	2.0
Medical news on television	2	2.0
Newsletters	2	2.0

with current information in the field, and only 45% regularly monitored indexing-and-abstracting services [18]. The present study also revealed that nurses seek information from colleagues more than from any other source, supporting the findings of Corcoran-Perry and Graves [19].

Further research is necessary to clarify why nurses use libraries on a limited basis. It appears, as Bunyan and Lutz contend, that a more aggressive approach to marketing the library to nurses is needed [20]. Further research should include an assessment of how the library can meet the information needs of nurses for both research and patient care [21]. Options to be considered include offering library orientation sessions for new staff nurses, providing current-awareness services by circulating photocopied table-of-contents pages, sending out reviews of new monographs, inviting nurses to submit search requests on a topic, scheduling seminars and workshops that teach CD-ROM and online search strategies, and providing information about electronic databases covering topics related to nursing. Information on databases may be particularly important in light of the present study's finding that databases available in CD-ROM format are consulted very little.

Nursing education programs should be expanded to include curricula bibliographic sessions where the librarian, in cooperation with the teaching faculty, visits the classroom to explain all pertinent information sources or invites the class to the library for hands-on demonstration and practice [22]. Nurses who gain working knowledge of the tools that open the doors to retrieval of research findings and who have information about new innovations in medicine and medical technology have superior chances for success in their chosen profession.

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British Medical Association Library free MEDLINE service: survey of members taking part in an initial pilot project

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INTRODUCTION

In October 1992, the British Medical Association (BMA) Library purchased a CD-ROM system that holds the full MEDLINE database (1966 to date) on hard disk and allows for dial-up access. A pilot project was initiated to test the system, streamline necessary administrative processes, and develop documentation before making free, dial-up MEDLINE service available to BMA members throughout the United Kingdom (UK).

The first 108 members to sign up received an information pack to help them access the service and carry out their own searches. To users with access to a computer (IBM compatible or Macintosh), modem, and recommended communications software, the service was available twenty-four hours a day, seven days a week, free of charge, except for the members' telephone costs. A help desk was available by telephone between 9:00 A.M. and 5:00 P.M. on weekdays. During the period covered by the pilot project, the number of users able to access the system simultaneously was increased from four to eight. The database was updated monthly.

BACKGROUND

Considerations involved in the purchase and installation of the BMA Library's MEDLINE system were documented by McSeañ and Law [1] and by McSeañ, Rowlands, and Forrester [2]. The development and implementation of a similar system by the Philadelphia Health Sciences Libraries Consortium also has been documented by Simon [3].

There is a growing body of literature on the provision of networked, online search services offered directly to end users, with user-friendly search programs either running as part of the host system interface or loaded as front-end software. Evidence from studies such as those by Tilson and East suggests that