How physicians and biomedical scientists in India learn information-seeking skills*

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INTRODUCTION

For physicians and biomedical scientists working in the United States today, there is ample opportunity to learn information-seeking skills, because health sciences libraries are providing access to user-friendly versions of databases and training users to become self-sufficient searchers [1]. MEDLINE is the most frequently searched database, and, at many institutions, its use is free to affiliated faculty and students.

Health care workers and scientists in developing countries offer a striking contrast to their U.S. counterparts. Many academic and hospital libraries in third-world countries are unable to provide their staffs with a core literature collection [2]. To complicate matters further, most third-world countries lack indexing and abstracting services of their own, and, because their local journals appear irregularly, they rarely are indexed in international services such as MEDLINE, EMBASE, or SCISEARCH [3]. As the literature of the biomedical sciences continues to expand, health care workers and scientists in emerging countries will find it essential to learn basic information-seeking skills in order to stay current on clinical practices and research techniques [4].

BACKGROUND

Since it attained independence from Great Britain in 1946, India has made a major commitment to training physicians. In the past fifty years, India has increased both the number of medical colleges it supports (all Indian medical schools are financed by the government, and students do not pay tuition) and the number of physicians it graduates by tenfold [5]. Although the medical education establishment in India maintains a good international reputation overall, there are deficiencies that in recent years have come under scrutiny [6]. Furthermore, because the competition for slots in Indian medical colleges is so intense, entrants are usually among the brightest students [7].

The quality of India's medical training programs may explain why Indian physicians were successful in securing residencies in U.S. hospitals until visa restrictions in the 1980s significantly limited the admission of foreign medical graduates. Between 1969 and 1982, more than 28,000 Indian physicians took the Educational Commission on Foreign Medical Graduates exam. The pass rate for Indian physicians was significantly higher than that for doctors from any other third-world country [8]. This may be due in part to the fact that early on in their training, Indian medical students receive in-depth exposure to clinical practice, and, by the time they graduate, they have handled a broad spectrum of diseases.

During numerous trips to India since the early 1970s, with time spent at hospitals, medical schools, research institutes, and libraries, this author developed an interest in learning how India was able to produce physicians and scientists of quality when the environment in which they worked was so information poor. The key question that emerged and that served as the impetus for this study was how do physicians and scientists in such a setting learn the skills needed to find the information they require to carry out their clinical responsibilities or perform research? The author also became interested in learning whether librarians taught physicians and scientists information-seeking skills. This paper reports on a study conducted to answer these questions.

METHODOLOGY

The objective of the study was to learn how physicians and biomedical scientists in India learn information-seeking skills. To carry out the study, the author visited India for three weeks in 1992, during which six focus-group sessions were conducted at each of two places: the All India Institute of Medical Sciences, New Delhi; and the Tata Memorial Cancer Centre/Cancer Research Institute, Bombay. The All India Institute is the counterpart of the National Institutes of Health in the United States, while the Tata Memorial Center is a world-class cancer hospital, and the Cancer Research Institute is its basic science unit. Two physicians at the LTM Medical College, Bombay, and the head librarian of each institution also were interviewed.

Focus groups

Generally, focus groups consist of seven to ten persons. Individuals are selected for group participation, because they have some characteristics in common. Each focus group has a facilitator, preferably someone...
unknown to members of the group, and it is that individual’s role to ensure an open, active dialog that fosters the expression of different points of view. Most focus-group research is conducted several times with different participants to identify trends and patterns in perceptions, behavior, and reactions. Hence focus groups are categorized as qualitative research, with discussions carried out in an open, collegial, and non-threatening way [9]. Focus sessions are usually successful, because through interaction with other people, individuals are stimulated to form their own opinions and verbalize them. However, there is evidence that individuals can be influenced by other focus-group members [10]. Asking the right questions is the key to conducting a successful focus group.

Each focus-group session conducted in India involved two to seven persons, who generally were acquainted with one another. Sessions were one to one-and-a-half hours in duration. Institutional hosts at each site solicited volunteers to participate in the sessions. The groups were homogeneous in terms of the number of years that had passed since graduate school, and physicians and scientists were interviewed separately. Participants included twenty-nine Ph.D.’s and twenty medical doctors. Sessions began by introducing the facilitator and explaining the purpose of the visit. Each participant was asked to sign in and provide his or her name, degree, professorial rank, and department; the date and time were also recorded. Each session was tape-recorded after receiving approval from the participants. The Appendix lists the focus questions asked.

Interviews with librarians

Interviews were conducted with the head librarian at each institution. Discussions centered on the mission of the library and its programs, services, collection policy, and current fiscal conditions. Most head librarians had obtained a bachelor’s degree in library science but lacked academic training in the sciences; obviously, there are exceptions to any generalization. Many libraries had only one or two staff members with formal training in librarianship. These two factors might explain why teaching information-seeking skills was not a library responsibility.

FINDINGS AND OBSERVATIONS

Physicians and scientists

Most physicians reported that while in medical school, they needed information that was found in textbooks or conveyed to them during class lectures. As they began their residencies, the type of information they needed changed, and they turned to journals and to the Cumulated Index Medicus to obtain more specialized information.

As graduate students, scientists in India, as did their counterparts throughout the world, needed the primary research literature. They regularly used indexing tools, such as Biological Abstracts and Chemical Abstracts, but the most popular secondary tool was Current Contents. According to the scientists interviewed, Current Contents has been available in major Indian research libraries since the 1960s. Interestingly, each index was available in at least one library in Bombay and New Delhi, but it was rare for a library to have more than one index. Scientists identified a core group of journals that were readily available and that they routinely read, and these served as valuable sources of information.

Learning information-seeking skills

Most participants reported learning how to find information from other individuals, such as a mentor, other students, or other physicians or scientists. None reported receiving instruction from a librarian in how to find information. Many believed that librarians lacked the training, subject knowledge, and technical expertise to teach information-finding skills. Both physicians and scientists indicated that they were performing their own literature searches, believing that their subject expertise enabled them to conduct a higher-quality search than could be executed by professional librarians.

Role of the librarian

Although many physicians and scientists believed that librarians lacked the background needed to perform a quality search or to teach them information-finding skills, focus-group members noted that the librarians in their institutions were quite skilled and helpful. Participants agreed that since the 1980s, the level of knowledge, skill, and expertise of librarians had improved; this probably explains why many individuals had positive things to say about the librarians working in their organizations.

Related findings

The focus-group sessions revealed several important and interrelated findings. For example, one of the major problems confronted by Indian physicians and scientists is how to gain access to the clinical and scientific information needed. It is also difficult to obtain copies of articles from international journals. In India, even the best libraries have very limited journal collections due to the high cost of subscriptions. In recent years, budget cuts have forced many libraries to reduce subscriptions further. To compensate, librarians in New Delhi and Bombay have developed a strong interlibrary cooperative network, allowing physicians and scientists to borrow an entire
journal issue, bring it back to their own institution, and photocopy the needed article.

CD-ROM versions of MEDLINE were available at each institution. However, at the All India Institute, only the library director was authorized to perform searches. In 1993, a networked CD-ROM version of MEDLINE for end-user searching finally was installed. By contrast, end-user searches were commonplace at Tata Memorial Cancer Centre. At the affiliated Cancer Research Institute, in addition to the CD-ROM version of MEDLINE, Current Contents and OncoDisc were also available in this format, and physicians and scientists regularly searched these databases.

Generally, physicians and scientists learned to perform bibliographic database searches on their own or with help from colleagues. They did not understand the role Medical Subject Headings (MeSH) served in ensuring a quality search; hence MeSH rarely was used, and they frequently had difficulty retrieving relevant articles. Nevertheless, participants still believed their searches were superior to those prepared by librarians.

Two other factors affected the ease with which individuals gathered information. Paper is expensive, and, when performing a database search, it was not uncommon for the searcher to write down citations that seemed pertinent rather than print them. Occasionally they might download search results to a disk; however, this approach posed additional difficulties, because few individuals had their own microcomputers to use in formatting and manipulating search results.

CONCLUSIONS

The focus-group sessions and interviews conducted in India revealed several interesting findings. Physicians and scientists learned information-seeking skills from their mentors, other students, or other physicians and scientists. None reported receiving instruction in these skills from a librarian. The libraries in the institutions visited did not offer training in information-finding skills, probably because a limited number of staff members were capable of developing such programs.

The study has several potential implications. First, there is a need to provide Indian librarians with enhanced professional training in the fields of librarianship, information science, and computerized information technology. Such training would enable these librarians to develop programs to teach physicians and scientists how to access, manage, and manipulate information and knowledge in order to provide quality health care and conduct research.

Second, Indian physicians must be provided with access to the full spectrum of electronic information resources now available. CD-ROM technology has the potential to enable this important breakthrough. Furthermore, the technology provides built-in learning tools to help physicians and scientists enhance their information-finding skills, while also providing access to biomedical databases and full-text versions of journals, textbooks, and manuals. The key is finding the financial resources to bring these products to emerging countries.

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REFERENCES

4. Ibid.
10. Ibid., 23.

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APPENDIX

Focus questions

1. What type of information did you need when you were a medical or graduate student?
2. When you were a medical or graduate student, how did you learn the techniques needed to find information?
3. When you were a student, did a librarian teach you to find information?
4. Do you use these same techniques today?