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# Library Use and Information-seeking Behavior of Veterinary Medical Students

## **Abstract**

Veterinary medical students at Iowa State University were assessed for general use of the veterinary library and for their information-seeking behavior. The library was most frequently used for studying and for making photocopies of materials. The typical respondent relied on course textbooks and handouts for current information on unfamiliar topics, instead of using indexes or abstracts for guidance to recent literature. Light use of library information resources raises the concern that students are developing an inadequate base of retrieval skills for finding information on new procedures, diseases and drugs. No differences were found between students with and without formal bibliographic instruction in their approaches to seeking information or in library use.

## **Disciplines**

Library and Information Science

## **Comments**

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# Library Use and Information-seeking Behavior of Veterinary Medical Students

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## ABSTRACT

Veterinary medical students at Iowa State University were assessed for general use of the veterinary library and for their information-seeking behavior. The library was most frequently used for studying and for making photocopies of materials. The typical respondent relied on course textbooks and handouts for current information on unfamiliar topics, instead of using indexes or abstracts for guidance to recent literature. Light use of library information resources raises the concern that students are developing an inadequate base of retrieval skills for finding information on new procedures, diseases and drugs. No differences were found between students with and without formal bibliographic instruction in their approaches to seeking information or in library use.

ALTHOUGH veterinary and human medicine are related in methods and techniques used, it is not clear whether the information needs of these professions are similar. While the information requirements and information-seeking behavior of the human medical community have been frequently addressed, there is little documentation concerning these needs in the veterinary community [1-2]. Only one report that evaluated the library skills of veterinary medical students has been identified by the authors [3].

Undergraduate veterinary medical education, for the most part, parallels that of the physician's (two years of basic biomedical sciences followed by two years of coursework in clinical application), but there are important differences. Veterinary students must locate information involving multiple animal species with vastly different medical requirements and their information needs are thus broad based. Information skills must be learned within four years of professional instruction. When the physician intern or resident is developing information-seeking skills for diagnosis and treatment, the veterinary student is already out in practice. Finally, many veterinarians will be isolated from

hospitals with libraries that provide convenient information access.

The recommendation of the American Association of Medical Colleges [4] that medical schools teach students skills necessary for accessing information independently is also relevant to veterinary medical students. As in other health professions, rapid changes in veterinary medicine are reflected in the growing mass of literature [5].

Given these considerations, we examined the information-seeking behavior of students at Iowa State University's (ISU) College of Veterinary Medicine. We wanted to evaluate students' *perception* of the demands of their curriculum for locating clinical information; to determine if they sought current information and where they sought it, and to find out how they intended to pursue continuing education when in practice. The survey population included students who had completed a required bibliographic instruction course as undergraduates as well as students with advanced degrees (M.S. and Ph.D.). This enabled comparison of students with greater library experience to those with lesser experience while both were exposed to the same veterinary instructional regimen.

The ISU Veterinary Medical Library is located centrally within the veterinary teaching and research complex. The 27,000 volumes of this facility and the general collection in the Parks Library on the central campus one-and-a-half miles away provide access to the veterinary and biomedical literature.

The questionnaire focused on four areas: students' general use of the library facilities, approaches in seeking current information, use of printed and computerized indexes, and sources for acquiring information upon entering practice. Since bachelor's degree candidates at ISU must pass a one-half credit bibliographic instruction course, those students were asked to identify them-

VETERINARY STUDENTS' LIBRARY USE AND INFORMATION-SEEKING BEHAVIOR

selves. Students enrolled in the undergraduate veterinary curriculum, but also seeking or holding an advanced degree were asked to provide that information. The questionnaire was sent to 453 undergraduates in the College of Veterinary Medicine between December 1986 and January 1987, with follow-up in March 1987.

FINDINGS

One hundred ninety-six completed questionnaires were returned and analyzed. This represented 46 (23%) freshmen, 60 (31%) sophomores, 51 (26%) juniors and 39 (20%) seniors, for an overall return of 43%. Thirty-two percent of the respondents held no previous undergraduate degree, 60% held a B.A./B.S. degree, 8% held the M.A./M.S. or Ph.D. degree and 3% were enrolled concurrently in a graduate program. Nearly one-half of the students (48%) had completed the ISU bibliographic instruction course. Others had received some type of library orientation (29%) or were self-taught (23%).

*Library Related Activities*

Students were asked to mark on a checklist the frequency with which they engaged in eight library activities (Table 1).

The most frequent use of the library (defined as every day and two to four times per week) was for studying coursework and for using the photocopier. Seeking information for use in coursework ranked sixth. This category was intended to indicate independent initiation of an information search in the library, rather than reaction to course-provided information sources such as reserve materials, photocopying specific articles, past tests, and reading lists. Almost 80% of the respondents (77% of senior

students on clinical rotation) indicated little use of the library for independent initiation of searches.

When asked the number of current courses that required the use of library materials, 45% of the students indicated "none". When the responses "none" and "one course" were combined, the figure increased to nearly three-fourths of the respondents. The objective of this question was not to measure the actual conditions in the curriculum, but rather the student's perception of what was required in a course load that typically includes five to seven courses per semester.

*Locating Current Information*

To find current information on a new topic, 57% of the respondents indicated that they used indexes and/or abstracts (Table 2). However, when questioned more closely about the sources they used most often, all four classes indicated assigned textbooks and course handouts two and a half times more than other sources (which included indexes/abstracts) (Figure 1).

Figure 1 also shows that freshmen used textbooks extensively and that seniors used indexes/abstracts least of all groups. The findings are similar to Stoyanova's study in which she reported that Bulgarian veterinary students confined themselves to texts and course material handouts when seeking information [3]. The same trend was evident in Northup's [6] and DaRosa's [7] studies of medical students, residents, and physicians, where proportionately more of the students were found to rely on books to satisfy information needs.

Other sources for locating current information—the library staff (60%), and browsing the shelves (55%)—ranked well below texts and handouts. Senior veterinary students, faced with clinical case-

TABLE 1  
STUDENT ACTIVITIES IN VETERINARY MEDICAL LIBRARY (n = 196 responses)

Activity	Every day	Frequency of response (%)*		
		2-4 times per week	Once per week or less	None
Using photocopier	3	55	41	1
Studying coursework	8	45	34	12
Reading reserve materials	1	30	65	4
Using holepunch, etc.	3	28	57	12
Leisure use	4	23	38	35
Seeking information for coursework	1	20	64	15
Using "old test" file	1	12	65	22
Seeking information for research	1	5	31	63

\*Percentages may not equal 100% due to rounding.

TABLE 2  
SOURCES USED BY STUDENTS FOR CURRENT INFORMATION (n = 196 responses)

Source	No. of "yes" responses	% Students
Handouts	183	93
Texts	179	91
Ask classmates or instructor	167	85
Ask library staff	117	60
Indexes/abstracts	111	57
Browse shelves	108	55
Card catalog	92	47

loads, were no more likely to consult library-related sources for current information than others.

Apparently veterinary students perceive the information that appears in textbooks and course handouts as being current enough for their needs. From the students' point of view these sources are convenient for covering much information in a short time.

Practicing veterinarians in Drake's report ranked journals as their primary source of new information in five of six categories (drugs and biologics, diseases, surgical procedures, preventive medicine, nutrition) [8]. When veterinary students were asked to indicate the primary function of journal indexes, 88% correctly selected the answer, "to list articles from periodicals." However, a large portion of students indicated that they never used *Index Medicus* (54%) and *Biological Abstracts*

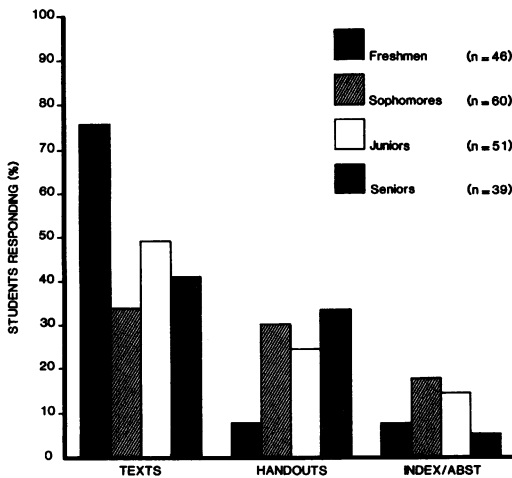


FIG. 1.—Source most often used for current information.

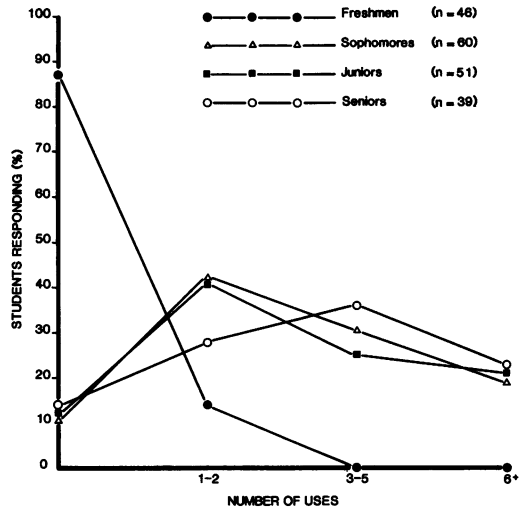


FIG. 2.—Student use of printed *Index Veterinarius*.

(75%). As shown in Figure 2 the most frequently used index is *Index Veterinarius*. Nearly 90% of the students in each of the upper three classes had used *Index Veterinarius* from one to six or more times, but 87% of the freshmen respondents had not used it at all. For the junior and senior classes, five to six uses of an index in the discipline would, in our estimation, be considered light usage; nearly 80% of these students had used the index five times or less. The overall use of other disciplinary print and computerized indexes is shown in Table 3.

Although some use was made of all print indexes, the only computerized index used by more than 5% of the students was *Veterinary Bulletin*, which had been used by 12% of the sophomores and 22% of the juniors one to two times as veterinary students. Use decreased to 4% and 8% in the freshmen and senior classes.

The observation that many students are not using indexes or abstracts raises concern as to whether they are gaining sufficient exposure to the literature. It seems that students are not taking time to explore journal literature as a resource while in veterinary school. Upon entering practice it is likely that they will subscribe to only a few journals [8,9]. The broad range of information required for treating multiple animal species with disparate medical requirements does not lend itself to a narrow information base. The danger is expressed by Sparks with regard to dentists: "perusing . . . a few specialty periodicals . . . do[es] not necessarily encompass a review of the subject or provide the broadest view of differing opinions and modes of investigation" [9].

TABLE 3  
STUDENT USE OF PRINT AND COMPUTERIZED INDEXES/ABSTRACTS (n = 196 responses)

	Frequency of response (%)*			
	0 times	1-2 times	3-5 times	6+ times
<b>Print</b>				
<i>Index Veterinarius</i>	29	32	23	16
<i>Veterinary Bulletin</i>	38	38	16	8
<i>Index Medicus</i>	54	29	7	10
<i>Biological Abstracts</i>	75	16	5	4
<i>Veterinary Reference Service</i>	81	14	3	2
<b>Computerized</b>				
Veterinary Bulletin	85	12	3	1
BIOSIS	96	2	1	2
MEDLINE	96	1	1	2

\*Percentages may not equal 100% due to rounding.

*Bibliographic Instruction*

Nearly one-half of the veterinary students responding had completed ISU's formal bibliographic instruction course prior to veterinary school admission. Another 29% of the students indicated that they had received some form of instruction or orientation at the college level and 23% indicated that they were self-taught. In addition, library orientation to the veterinary medical library is presented during a one-half semester general orientation course for freshmen veterinary students.

No differences were found between students with formal instruction and those without in their approaches to seeking information or to library use. The exception was 58% of the sophomore respondents who indicated that they had library instruction for a specific course in which they were required to write a topical paper. This class indicated significantly greater use of library materials for course work (p < .01).

From these observations we can conjecture that by the time students enroll in more advanced courses, they may have forgotten library skills and resources introduced earlier. The goal of library instruction for health profession students is to improve the quality of patient care [10] and the critical role of faculty in initiating library instruction and use of materials is evident in the response of the sophomore class. Although time outside the classroom is at a premium for all veterinary students, many respondents in this class allotted extra time for a specifically directed library activity. Librarians at Texas A & M University Medical Science Library found, also, that a computer literacy course taught to the sophomore veterinary class

increased computer search requests, with some students subsequently performing their own searches [11].

*Advanced Degree Students*

Veterinary students who held advanced degrees (sixteen) or were concurrently enrolled in a graduate program (four) exhibited more experience and diverse information-seeking behavior. This group demonstrated significantly greater use of indexes/abstracts for finding current information than did the general body of students; 80% used these tools as compared to 60% of the over-all population (p < .01). They also indicated that these tools were their first choice (40%) in comparison with general veterinary students (11%). Finally, only 25% of advanced veterinary students indicated that they spent no time looking for information related to research, in contrast with 63% of the general respondents.

*Continuing Education*

Most of the veterinary students surveyed (86%) anticipated becoming clinicians. For many new practitioners this means choosing a small city or suburban community where ready access to veterinary information may be limited to personally owned books and journals [12,13]. Many graduating students, however, will choose to specialize in one species or in large or small animal practice [14], thus effectively narrowing information needs. When asked how they anticipated fulfilling continuing education needs as practitioners, over 95% of the respondents felt that courses/workshops, conferences/meetings, and colleagues were the most important sources (Table 4).

TABLE 4  
 INFORMATION SOURCES FOR CONTINUING EDUCATION NEEDS (n = 196 responses)

Source	Frequency of response (%)*				
	Not important	Somewhat important	Important	Quite important	Very important
Courses/workshops	0	2	20	34	45
Conferences/meetings	0	3	20	39	38
Colleagues	0	5	23	39	33
Personal library	3	15	32	49	1
Veterinary library	6	35	34	16	9
Computerized information	20	34	34	5	6
Public library	30	40	21	6	4

\*Percentages may not equal 100% due to rounding.

The personal library, including journals, was considered to be an important to very important source by 82% of these prospective veterinarians. Nearly one-third of the respondents considered the public library to be a possible source for continuing education, although most public libraries do not collect veterinary materials [2].

Computerized information services were rated by 45% of the respondents as important to very important as sources for continuing education. Unfortunately, since we did not offer specific examples in this category, we can only conjecture as to what the students perceived these services to be. Their response may have been formulated from personal experience with microcomputers, from courses at ISU or elsewhere, or from their experience in the one-half semester elective microcomputer applications course offered in the ISU veterinary curriculum.

Computers are following the path of other technologies into the home and business market; the veterinary profession is no exception. Perusal of the veterinary literature revealed publications such as *Veterinary Forum*, *Practice Management*, and *Veterinary Computing* (incorporated in *Modern Veterinary Practice*) that carry authoritative columns and articles for veterinarians who have or anticipate adding a desktop computer to their practice. The majority of the computer applications articles in these publications address the business side of practice (patient, client, and inventory records kept on an in-house microcomputer). Few articles cover the topic of accessing or storing bibliographic information.

The students who saw computerized information services as contributing to their continuing education represent a potential market for bibliographic information services that can be supplied by exist-

ing databases [15] or that may be developed by information professionals. Computer software companies offering veterinary products could demonstrate these products through classroom presentation or at student meetings. Required computer bibliographic instruction within the veterinary curriculum, as reported by MacNeil [11] and by Ward [16] serves to enhance awareness of these services. Training is particularly appropriate for veterinary medical students because many veterinarians do not have ready access to hospitals with veterinary materials. Over 55% of practicing veterinarians in Drake's report [8] indicated need for current information in the form of references or abstracts and for computer literature searches. The microcomputer can play an obvious role in filling the void for information caused by the isolation of many veterinary practices.

#### CONCLUSION

The veterinary medical students surveyed did not regularly initiate independent information searches in the library for use in coursework, but rather relied on course textbooks and handouts. Library resources, such as indexes/abstracts, were used more by students in the clinical curriculum who held or were seeking advanced degrees, reflecting this group's greater prior exposure to information resources. Non course-related bibliographic instruction made no difference in the students' approaches to seeking information or in library use, possibly because many of the respondents perceived that these activities were not required by the curriculum. The students' light use of other information resources, particularly print and computerized indexes/abstracts, raises concerns as to whether they are developing an adequate base of information-seeking and retrieval skills. The veterinary

medical students in the survey who saw computerized information services as a means of continuing education represent a market for bibliographic services that can, in turn, play an instrumental role in reducing the information isolation of many veterinary practices.

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