3 Management of bibliographic information by Dutch researchers in general practice

ABSTRACT

Introduction. As a result of changes in information technology and the rapid growth of publications, methods of searching the literature have changed. Systematic searching of the growing literature has become very important. It is not known whether researchers in general practice search systematically, and whether they have incorporated computerized sources in their research practice.

Method. We aimed to assess the methods of searching the literature used by GPs, and therefore we interviewed eight GP researchers, two information specialists and a psychologist working in primary health care organizations.

Results. The GP researchers began their search in their private book collections, or asked colleagues for information. Later in the search process, they used computerized information sources. Medline on CD-ROM and the computer-based indexes of two Dutch journals were most widely used. The GPs found it difficult to locate the appropriate terms to describe their research questions. Knowledge of the methods of searching the literature, and skills required to use the information sources efficiently were both lacking. There was a need for instruction and training in the use of information sources. GPs needed a telephone help desk where their questions could be answered adequately.

Conclusion. GP researchers search the literature unsystematically. Although computerized databases were being used, knowledge and skills related to the use of these information sources should be improved.

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INTRODUCTION

As the number of publications in medicine increases, searching the literature systematically becomes more important. Electronic bibliographic databases with references to the medical literature, such as Medline, make it possible to select articles. Medline is the counterpart of the printed Index Medicus, and it contains literature citations from 3700 international biomedical journals. The producer of Medline, the National Library of Medicine, Bethesda, USA, has offered Medline to online users since 1970. With a computer, a modem and a telephone connection to a vendor, citations and, in 80% of cases, abstracts, can be searched and selected interactively. The citations can be loaded onto a personal computer and later manipulated with a word processor or database management system such as Reference Manager or Cardbox. In the Netherlands, only large organizations such as universities use online bibliographic databases, because of the costs and the skills required. To meet these perceived disadvantages of online searching, and as a result of technical improvements, Medline became available on CD-ROM in the 1980s. It is now offered by most
hospital libraries and universities through a local network. More recently, it has become possible to search Medline on the Internet, via vendors such as Dialog and Datastar; via an interface such as Grateful Med, and on compact disk such as Silverplatter. However, GPs do not use computerized databases frequently. They are more likely to refer to colleagues and journals for information, followed by books and meetings, and finally computerized databases. We therefore wanted to determine whether GP researchers search the literature systematically, whether they use computerized information sources as well as traditional sources, and what problems they encounter.

METHODS

After studying the literature, we composed an interview guideline, interview questions and a candidate list. The questionnaire included (see appendix):
- a short list of personal characteristics;
- 25 open questions on experience, knowledge, and practice of literature research;
- a questionnaire with multiple choice questions on the use of 30 information sources; and
- questions on problems encountered during literature research.

The questions were asked in a fixed order.

We composed a list of candidates for interview on the basis of their experience on literature research; achieving a balanced spread over the eight Dutch Departments of General Practice and a distribution of the backgrounds of the candidates. These included GP researchers paid by the Governmental Organization for Research (NWO); GPs who combined patient care with research; GPs who had already obtained their PhD; professors; editors of medical journals; and medical librarians. Of the 13 candidates invited for the interview 11 accepted.

Of the eight physicians interviewed, seven were GP researchers, and one physician undertook research in general practice. For the analysis, we considered these researchers as one group: the GP researchers. Of the three non-GP researchers, two were medical information specialists of the Dutch College of General Practitioners (NHG), the third was a psychologist of the Netherlands Institute of Primary Health Care (NIVEL). Four of the interviewees were women, one of whom was a GP researcher. The average age of the GP researchers was 42 years, and of the non-GP researchers 40 years. The GP researchers had an average of 13 years’ experience in patient care, eight years’ research experience, and they had published one to more than 100 articles.

The interviews were held from December 1993 until June 1994 at the place of work of the interviewees, except for one. All interviews were conducted by the first author. The interviewer made notes during the interviews. In addition, all interviews were recorded on tape. On average, an interview took 70 minutes. Because no new information emerged, we stopped after 11 interviews.
RESULTS

Place of literature research
All the GP researchers were positive about literature research ("lovely", "finger-lickin’ good", "it sharpens you"). On the negative sides of literature research the interviewees mentioned its time-consuming nature, misleading titles of articles, repetition of authors ("that is very irritating"), and the need for perseverance. The GP researchers had little knowledge of literature research before they began their research projects. However, two GP researchers had read articles about medical literature.6 The non-GP researchers were of the opinion that GP researchers did not prepare their literature research well ("general practitioners are priggish, they think they already can manage it"). It took the GP researchers a lot of time to trace the appropriate literature: up to 50% of their research time. They prepared their literature search by selecting keywords, journals and key authors of their subject, and browsed in their personal library. The two most experienced GP researchers worked very unsystematically. The most important times for tracing the literature was before the research question was stated, and during writing the report. However, most of the GP researchers said they searched the literature throughout their research project.

Practice of literature research
GP researchers typically used three methods at the start of a new project. To make a first draft for a new research project, they searched their personal files of journal articles. In addition, they browsed through medical journals by hand ("trial and error", "the most surprising information I find accidentally"). They also perused the citations of known and relevant publications, especially review articles. When the research had progressed and the subject was well defined, the GP researchers used keywords to select articles from journal indexes. Only when the research came to an end did the GP researchers use computerized literature sources such as Medline on CD-ROM. The literature search ended when the same articles were found increasingly. After asking about the role of personal relationships, the GP researchers said that researchers, as well as librarians, played key roles in obtaining information on the subject in all phases of the literature research ("experts are very important when you have limited time or technical problems"). The three non-GP researchers assisted the researchers in setting up a search strategy for Medline on CD-ROM. They also showed them how to use the catalogue, as well as how to find books and journals in the library.

The information sources
In addition to the open questions, the printed multiple-choice questions showed that GP researchers used their personal library, books, journals, people, libraries, and electronic sources. Most frequently, the GP researchers consulted their own book collection or article files, often daily. These referred to Dutch books and journals as well as books and journals in a foreign language, depending on the subject. They also browsed in books regularly, with no particular purpose, although they did not use books a lot, because they were considered as becoming out of date too soon. A popular method was to scan the literature lists in journal articles, reviews and
dissertations in order to detect useful citations. GP researchers consulted their colleagues on a monthly basis. Medical specialists, pharmaceutical representatives, congress participants, and librarians were seldom consulted. The hospital library or the library of the department of general practice were visited weekly to monthly. All GP researchers except one used computerized bibliographic databases. Those who worked at an academic centre used Medline on CD-ROM; some delegated the searching to librarians. In general, those who searched themselves were satisfied with the search results. One of them said that, in general, people overestimate the computer. One GP researcher even checked computerized systems with people ("I never trust computers; I always test the provided information through people").

The two major Dutch journals, *Huisarts en Wetenschap* (General Practitioner and Medical Science) and *Het Nederlands Tijdschrift voor Geneeskunde* (Dutch Medical Journal), both have a computer index. Five of eight GP researchers used one of them. Only one GP researcher used the online catalogue of the university library or hospital library (OPAC, online public access catalogue). Some of the GP researchers did not even know that OPAC existed. Nobody used *Current Contents on Diskette* (CCOD), containing tables of contents of the latest issues of a wide range of journals.

Two GP researchers delegated literature searching to the library of the Royal Dutch Academy of Sciences (KNAW), to a hospital library, to the library of the Royal College of General Practitioners in London, or to a student on work placement.

**Choosing an information source**

Several factors influenced the choice of an information source. First of all, the GP researchers preferred an information source which was easy and quick to use ("I have the computer index of some journals at hand"). Second, the information source should be close to the user ("now I can use Medline at my desk through the university network, I use it more frequently"). Finally, negative or positive experiences with information sources had a large impact on the use of these sources in the future ("if you only once had a negative experience, you will never use it again").

The three non-GP researchers were convinced that accessibility was the most important factor. Librarians should give information on the ins and outs on searching the medical literature, and how GP researchers could search on their own in the future.

**Storing the literature**

Only two of the GP researchers actually used a computerized system to manage literature citations (Cardbox). Three other GP researchers had stopped using it, because using it took too much time ("the discomfort of importing the citations and the time involved did not make odds against the results"). Three GP researchers did not use a system for the citations at all, but filed documents directly by subject or author. One GP researcher used the International Classification of Primary Care (ICPC) code to file his journal articles.

**Problems and solutions in literature research**

The GP researchers experienced two major problems: translating the subject into keywords, and the time it took to search the literature. Finding the appropriate
keywords was difficult, and different keywords were sometimes used by different sources. It seemed as if in general practice the terminology was not unequivocal. Sometimes keywords on their subject did not exist at all.

It took too much time to visit a library, and to photocopy (“first the problem with the money for the photocopier, there should be a money-changer next to the photocopier, next there is a line of people waiting for the photocopier, and after this all I have lost my concentration totally. I would become a donor to the library, as long as I can make my photocopies”). The GP researchers suggested several solutions. First of all, they wanted to incorporate structured library instruction and use of information sources in the vocational training for general practice. In addition, the accessibility of libraries should be improved, either in reality or in virtual reality. In the library the photocopying facilities should be increased. Three GP researchers passed on some specific ideas to improve the information facilities. An ideal information facility should consist of a local information centre, where help is offered personally, by post or by telephone. At this help desk, an information specialist with expertise in the field of general practice and information sciences as well should meet the needs of the general physicians at different levels. Additionally, the non-GP researchers noticed a computer illiteracy in GPs. Libraries needed clear information leaflets to inform visitors on the library collections where things can be found, and how they can be used. Library personnel should have a medical education (“only with diligence and good-will you can’t manage”), and be more client centred (“librarians should notice when GPs lack the knowledge to use the library, or when they are too shy to ask for help”).

**DISCUSSION**

This study shows that the interviewed Dutch GP researchers search the literature unsystematically, and that they use Medline as the only computerized information source. The main problems they encounter are finding the appropriate keywords and time to search the literature. Although the GP researchers in this survey used Medline and the electronic indexes of two important Dutch medical journals, they did not use these sources systematically or efficiently. This was because it was difficult to select the appropriate keywords, and because the information source was not available, not easily accessible, or too difficult to use. In addition, they were ill-informed about other electronic information sources, such as the computer catalogue of libraries. This inefficient use of electronic sources could be one of the reasons why literature searching took so much time.

The interviewees suggested some solutions to the problems encountered. One suggestion was structured library and computer instruction in the vocational training for GPs. This could reduce the physical and psychological barriers encountered in the use of libraries. Another problem was the need for professional aid in searching the literature. GP researchers preferred an information desk accessible either through a personal appointment, by post or by telephone. The structure of the Dutch library and information world does not meet this demand. Information about general practice is scattered around the country, and different organizations have different opening hours, subscription requirements, quality levels, and subject scopes. A separate organization
with local departments, for example as a part of the Netherlands Institute of Primary Health Care (NIVEL) or the Dutch College of General Practitioners (NHG), could function as a professional information help desk. This new organization should combine medical knowledge on general practice with skills to manage medical information.

The existing literature mentions this need among GPs. Free teleinformation desks have been set up, where GPs could receive tailored information, as well as literature lists on special subjects, and photocopies of journal articles. Other authors have described an experiment with an online connection between the librarian and the GP’s computer. In this way a GP could request for an online literature search at home, and at the same time watch and guide the librarian’s search strategy. At the end, the GP receives the print-outs from his own printer.

The present interview study has some limitations. We selected 13 possible interviewees, two of whom declined to take part. We therefore interviewed only a fraction of the total number of GP researchers. In choosing the interview method, we could have been given socially acceptable answers. In addition, the interviewer could be biased by previous interviews. To reduce this bias, we used a fixed list of interview questions. The advantage of the interview technique is that it provides very specific and detailed information.

As far as we know, no one has published studies of the literature search habits of GP researchers as a group. In other countries postal surveys have been carried out to assess the information needs of practicing GPs. In general, these results are quite similar to ours, although in our study the use of electronic sources ranked higher. Connelly found that GPs used people, journal articles and books most frequently as an information source. Accessibility seemed to be the most important factor in choosing and using information sources.

In summary, this study shows that the interviewed Dutch GP researchers search the literature unsystematically, and that they use Medline as the only computerized information source. The main problems they encounter are finding the appropriate keywords and time to search the literature. Still it is unlikely that electronic information sources will oust people or printed sources from the first place in the near future.

Acknowledgement

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REFERENCES

2 URL: http://www.krinfo.ch
3 URL: http://igm.nlm.nih.gov
4 URL: http://www.silverplatter.com
APPENDIX
Interview scheme for the interviewer

Instructions for the interviewer:

- Follow the given order of the questions.
- Read out loud literally the questions that are printed; read quietly.
- Check in advance that the tape recorder operates.
- Each interview should be on a separate cassette.
- Write the name of respondent on the cassette-label.
- Just before the first question, make a note of the starting time.
- Do introduce yourself. Refer to the announcing letter the respondent has received from the researcher; and also refer to the appointment made by telephone for this interview.
- Before starting with the questions, bring the following points to the notice of the respondent:
  - Bodies responsible for the study: University Library and the Department of General Practice of the University of Groningen.
  - Name of the respondent was obtained through ..........................................................
  - The questions will discuss the way general practitioners gather literature references for research.
  - Two questions, which are more suitable for written answering, will be handled over to the respondent as a questionnaire. The other questions have to be answered orally and most of them are open questions.
  - Purpose of the interview is twofold.
    1. To gain an impression of the practice of literature-gathering by general practitioners for research. In this way the bottlenecks can be detected.
    2. To collect the basic material for a written questionnaire that will be sent to a sample of Dutch general practitioners.
- ONLY FOR THE PILOTS: "Because your interview will be used as a pilot study, it is possible I will approach you later, to ask you additional questions by phone. Would you agree to that?"
- The results of the interviews will be published in a journal.
- Tape recording is desired. Tapes will be typed and the typed text will be discussed by three people.
- Except for the study of the interviewer, the results of the interview will not be used.
- Length of the interview: 1½ to 2 hours.
- Does the respondent have any questions or difficulties? If not, begin!
- Note: Starting time: ......

QUESTIONS

- 1
  We need some personal data about you. Would you be kind enough to fill in this form?
  (Hand over the appendix on personal data.)
  Please, switch on the tape recorder now.

- 2
  General: When you performed a literature search in the past, how did you go about this, for example in your last research project?
  (Stimulate the respondent to mention as many aspects as possible. If necessary, explain the question in your own words. But don’t give examples.)
  Make a note of the answers by means of keywords.
Place and preparations of the literature search: Now, I want to ask you some more specific questions about your literature search. I define a literature search as follows: all decisions and acts needed to locate and to obtain scientific documents, and to give account of the search process in a report, in order to describe what is known in the scientific literature about a specific subject. The following questions are about the place of the literature search within the whole of your research, and about the possible preparations you made for it. For example, in your last journal article.

3 In comparison with the time you spent on the paper as a whole, how much time did your literature search take?
(If necessary, give some details as follows.) Was it more or less than half the time you spent on the research as a whole? More or less than a quarter or a tenth of the time?
Make a note of the answers by means of keywords.

4 When do you usually perform a literature search?
(If necessary, enumerate the possibilities given below. Tick where appropriate; other answers are possible.)
Make a note of the answers by means of keywords.
☐ Before the phase of question presentation
☐ During the process of question presentation
☐ During the collecting of the research data
☐ During the reporting of the research
☐ After the reporting of the research
☐ After publication of the research

5 How did you like the work of collecting literature references?
(If needed, clarify the question by asking what kind of feelings he or she has while collecting references.)
Make a note of the answers by means of keywords.

6 Did you construct a strategy in advance to search through the literature in order to collect your references?
Tick where appropriate:
☐ yes, continue with question 7
☐ no, continue with question 8

7 What was your strategy for searching the literature?
(Stimulate the respondent to mention as many aspects as possible. If necessary, explain the question by giving the following examples: what sources and what keywords could be used?)
Make a note of the answers by means of keywords.

8 Before you started searching for literature references, did you ask advice about the best way to go about it?
Tick where appropriate:
☐ yes, continue with question 9
☐ no, continue with question 10
9
Whom did you ask?
Tick where appropriate and/or fill in; other answers are possible.
☐ Colleague general practitioner
☐ Medical specialist
☐ Other kind of physician
☐ Librarian
☐ Other person, namely: .......................................................................................

10
Before you started searching for literature references, did you read about how to perform a literature search?
Tick where appropriate:
☐ yes, continue with question 11
☐ no, continue with question 12

11
What kind of printed texts did you consult?
Tick where appropriate and/or fill in; other answers are possible. (If necessary, give an example, for instance: a book or a journal article)
☐ Book on family medicine
☐ Medical book, not family medicine
☐ Book on library or information science
☐ Literature guide
☐ Medical journal article
☐ Article, other
☐ Other, namely: ................................................................................................

12 to 17
Information sources and accessibility

12
Now I would like to ask about information sources that could be used in gathering literature references. The definition of an information source is: a document, person or body, which contains itself the whole document to which the literature reference refers (e.g. a journal article), or which refers to the original document (e.g. a catalogue or a person).
Please would you let me know about which information sources you use by completing the appendix on information sources, which I am now giving you. Indicate how often you use each source that you mention.
Do you browse sometimes through journals or books in (personal) libraries? If your answer is yes, tick yes in question 1, otherwise no. If your answer is yes, tick also the right box concerning the frequency (daily, weekly, monthly or less frequent).
(Hand over the appendix on information sources.)

13
Could you indicate why you use one information source more frequently than another?
(Enumerate the sources the respondent uses daily. If necessary, ask what advantages these sources have. Mention, if necessary, the following qualities: distance from the source, speed of search, understandability and relevance for research.)
Make a note of the answers by means of keywords.
14
Have you ever stopped searching for references even though you thought that there were probably more?
Tick where appropriate:
☐ yes, continue with question 15
☐ no, continue with question 16

15
Could you tell some more about it?
(Stimulate the respondent to say as much as possible. If necessary, explain the question by formulating it in your own words. For example, ask for the reason for giving up the search for references.)
Make a note of the answers by means of keywords.

16
On the paper you just filled in, you have indicated whether or not you use people as an information source.
If the answer was:
☐ yes, continue with question 17
☐ no, continue with question 18

17
Could you tell me anything more about the circumstances in which you get literature references from others?
(Stimulate the respondent to say as much as possible. If necessary, indicate: whom you got the information from, the frequency compared to other sources, the circumstances in which the references were obtained - by chance, during a meeting, or during a hospital visit - and if the references were useful or not, and why.)
Make a note of the answers by means of keywords.

18
On the paper you just filled in, you have indicated whether or not you use computerized databases as an information source.
If the answer was:
☐ yes, continue with question 19
☐ no, continue with question 20

19
Could you tell me anything more about your experiences with computerized databases?
(If necessary, explain what these systems imply. Ask if the next items have been used; ask who drew the respondents’ attention to the following items.)
☐ the OPAC
☐ the CD-ROM
☐ online literature searches (would he or she like to search Medline or other online databases personally?)
☐ Current Contents on Disk, Reference Update
☐ Reference Manager, Cardbox
☐ computerized indexes (table of contents) of Huisarts & Wetenschap and Het Nederlands Tijdschrift voor Geneeskunde
☐ instruction in library use
☐ instruction in use of bibliographies
Make a note of the answers by means of keywords.
Handling literature references
The following questions deal with the method of handling literature references.

Do you use a system for coping with your references, such as a manual or a computer card index?
Tick where appropriate:
☐ yes, continue with question 21
☐ no, continue with question 23

Which of the both systems do you use?
Tick where appropriate:
☐ Manual card system
☐ Computer card system

Could you tell some more about your card system?
(Stimulate the respondent to say as much as possible. Encourage.)
Make a note of the answers by means of keywords.

How do you file your reference papers?
(Stimulate the respondent to say as much as possible. If necessary, give instructions by asking: by author, subject or number.)
Make a note of the answers by means of keywords.

Do you think that a general practitioner who performs a literature search for patient care acts differently than a general practitioner who performs a literature search for a research project?
Make a note of the answers by means of keywords.

What problems do you encounter when searching for literature references in your research?
(Stimulate the respondent to say as much as possible. Tick the items that the respondent names. Make a note of the answers, other than stated. Enumerate the next subjects, when the respondent is finished.)
☐ To find the appropriate keywords
☐ To find the appropriate information sources
☐ To obtain the documents (document delivery)
☐ Keep up to date with the literature on your subject
☐ Organizational problems (e.g. finding a locum, or problems concerning the library)
☐ Lack of time
☐ Table of contents, indexes of books and journals
☐ Unfamiliarity with information sources, such as computerized databases
Do you have any ideas or suggestions to improve the supplying of research information to general practitioners?
(Stimulate the respondent to say as much as possible. Tick the items that the respondent names. Make a note of the answers, other than stated. Enumerate the following subjects, when the respondent is finished.)

- Information on literature research: medical study, education for general practitioners, post graduate courses
- Information on literature research in books or libraries
- A more efficient access to books and journals
- Library organisation
- Computers
- Expertise of library personnel
- Document delivery
- Public relations of library and its services

Closing off and thanks
This was the last question. You have answered all questions. Thank you very much for your extensive answers. We will use your information, and those of other respondents, to write an article. If you would like to receive a copy of the article, we will send it to you. Do you want to receive the article? Encircle the answer: YES / NO

Do you have any question or remarks?

The end: stop the tape recorder.
Time: ............
Topics discussed after the official interview: .................................................................
PERSONAL DATA

Personal details
Name :
Position :
Employer :
Age :

Experience
Years of experience as a GP :
Years of research experience :
Number of research publications :
(one of the authors, in a peer-reviewed journal)

Present position
Week task:
Number of hours patient care :
Number of hours teaching :
Number of hours of research :

Tick the appropriate box

Are you formally affiliated with a university department?
☐ yes, namely with
☐ no

Are you a teacher?
☐ yes; kind of students:
☐ no

Do you perform research?
☐ yes, and the purpose of it is:
☐ no

Memberships
Are you a member of a research or professional association?
☐ Dutch College of General Practitioners (NHG)
☐ National Association of General Practitioners (LHV)
☐ Other, namely:
INFORMATION SOURCES

1. Browsing in journals or books
   - Yes, are they mostly: Dutch, foreign, fifty/fifty
   - Frequency: daily, weekly, monthly, less often than monthly
   - No

2. Consulting your own bookshelves
   - Yes, frequency: daily, weekly, monthly, less often than monthly
   - No

3. Consulting the bookshelves of friends or colleagues
   - Yes, frequency: daily, weekly, monthly, less often than monthly
   - No

4. Other general practitioners
   - Yes, frequency: daily, weekly, monthly, less often than monthly
   - No

5. Medical specialists
   - Yes, frequency: daily, weekly, monthly, less often than monthly
   - No
6. **Drug salesmen/women**
   - yes, frequency: daily
   - weekly
   - monthly
   - less often than monthly
   - no

7. **Speakers on medical congresses, workshops, or medical continuing education courses**
   - yes, frequency: daily
   - weekly
   - monthly
   - less often than monthly
   - no

8. **Reference librarian or medical information specialist**
   - yes, frequency: daily
   - weekly
   - monthly
   - less often than monthly
   - no

9. **Lists of references in medical journal articles**
   - yes, frequency: daily
   - weekly
   - monthly
   - less often than monthly
   - no

10. **Lists of references in review articles**
    - yes, frequency: daily
    - weekly
    - monthly
    - less often than monthly
    - no

11. **Lists of references in a doctoral thesis**
    - yes, frequency: daily
    - weekly
    - monthly
    - less often than monthly
    - no

12. **Lists of references in grey literature**
    - yes, frequency: daily
    - weekly
    - monthly
    - less often than monthly
    - no
13. **Lists of references in books**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

14. **Library catalogues (computer catalogue = OPAC; or card index)**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

15. **Printed bibliographies, such as the Index Medicus or the NIVEL bibliographies)**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

16. **Printed index of Het Nederlands Tijdschrift voor Geneeskunde**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

17. **Printed index of the journal Huisarts en Wetenschap**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

18. **Electronic bibliographies on CD-ROM, such as Medline**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No

19. **Online literature research by a medical librarian, such as Medline through DIMDI**  
- Yes, frequency:  
  - Daily  
  - Weekly  
  - Monthly  
  - Less often than monthly  
- No
20. **Electronic Current Awareness (journal contents), such as Current Contents, or Reference Update**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no

21. **Printed version of Current Contents (Life Sciences or Clinical Medicine)**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no

22. **Computerized index of Het Nederlands Tijdschrift voor Geneeskunde**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no

23. **Computerized index of the journal Huisarts & Wetenschap**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no

24. **Institutions or organisations, such as patients’ associations, or the Dutch College of General Practitioners (NHG)**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no

25. **Have you ever asked somebody or some organisation to do a literature search for you?**
   - yes, ... times
     - I asked:
   - no

26. **Hospital Library**
   - yes, frequency:  
     - daily
     - weekly
     - monthly
     - less often than monthly
   - no
27. University Library
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

28. Library of a Department of General Practice
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

29. Library of the Netherlands Institute for Research of Health Care (NIVEL) in Utrecht
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

30. Library of the Dutch College of General Practitioners (NHG) in Utrecht
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

31. Library of the Institute for Research and Support (O & O) for general practitioners
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

32. Other library, namely: ........
   □ yes, frequency: □ daily
   □ weekly
   □ monthly
   □ less often than monthly
   □ no

HERE ENDS QUESTION 12 ON THE USE OF INFORMATION SOURCES