

HEALTH INFORMATION NEEDS AND THE INTERNET: A SURVEY OF
OLDER ADULTS

by
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This study describes a survey of 75 older adults at three Senior Centers in Durham, North Carolina and one retirement community in Chapel Hill, North Carolina. The survey was conducted to determine which types of health information and which Internet capabilities, used to access that information, seniors think are important.

As people age health concerns may become more apparent. Respondents indicated that disease specific and drug information were the most important types of health information, followed by contact information for local health facilities, physicians and support groups. 34.7% of the respondents indicated that they had experience with the Internet. Those subjects reported that links to national health databases and online consultation with medical experts were the most important Internet capabilities.

Headings:

Information systems -- Special subjects -- Health sciences

Surveys -- Information needs

Public libraries -- Services to senior citizens

Use studies -- Internet

Library schools -- Theses -- University of North Carolina at Chapel Hill

INTRODUCTION

This study investigates the opinions of older adults regarding specific types of health information and their use of the Internet to access that information. Older adults are identified in the Report of the Governor's Taskforce for Healthy Carolinians 2010 (2000) as a population deserving of special consideration. The nationwide elderly population (65 and over) will rise by 28 million people, which is 39 percent of the projected total population growth. This means that 27 states, including North Carolina, will have a fifth or more of their population fall into the elderly age group. (United States Department of Commerce, Bureau of the Census, 1996). The elderly population (65 and over) will increase in North Carolina from 0.80 million in 1990 to 1.66 million by the year 2020. The very old population (85 and over) will almost triple during this time period, increasing from 69,000 in 1990 to 199,000 in the year 2020 (North Carolina Office of State Planning, 2000).

The public's preoccupation with health continues to grow. "Health concerns cut across all social, political, and economic divisions" (Rees, 2000). The ideas of wellness and prevention have become increasingly popular. Society places a great deal of value on youth and remaining active. Attempts by managed care plans to streamline services and cut costs have shortened hospital stays, increasing the need for patients and their families to understand how to provide care themselves (Committee on Enhancing the Internet for Health Applications, 2000). Consumers have been forced to learn the details of health plans, drug formularies, drug interactions, specific diseases, clinical trials and

symptom management. All of these factors have contributed to the growing interest in consumer health information.

The growth of the Internet is unparalleled. According to Rogers (Rogers, 2000) the rate of adoption of the Internet in industrialized nations might represent the fastest rate of adoption of any innovation in the history of mankind. The Internet can be especially useful in relation to a number of health information needs. It can be used to gather information on the symptoms of diseases and new drugs; identify alternative treatments; monitor current research; obtain full-text of pamphlets and reports; stay abreast of innovative treatments and clinical trials; locate support groups; and enter into discussion in newsgroups and chat rooms (Rees, 2000).

Seniors citizens are at a time in their lives when health related matters are often a great and frequent concern. The Internet offers a real cornucopia of medical advice and information, especially useful for those who may find themselves housebound due to illness or limited mobility. Seniors are beginning to use this new technology. Cyber Dialogue reports that between April 1997 and December 1998, the number of individuals aged 50 and over seeking health information online has almost tripled to 6 million from 2.1 million (Seay, 1998). Jupiter Communications (2000) reports that by the end of 2000, adults ages 50 and older, will account for 23 million Internet users, comprising a market larger than that of any of the youth segments: kids (14 million), teens (13 million), or college students (12 million).

The University of North Carolina at Chapel Hill's Health Sciences Library (HSL) and School of Information and Library Science (SILS) are working together on a feasibility study concerning local health information on the Internet. The North Carolina

Health Information Online project will determine whether it is possible to gather North Carolina specific health information and link it with MEDLINEplus, the National Library of Medicine's (NLM) consumer health web site. This effort is supported through a grant from the National Network of Libraries of Medicine, Southeastern Atlantic Region. Local health information can be that which pertains only to a specific locale or region.

Examples would include support group descriptions and contact information, public health issues, environmental health concerns such as well water testing locations and fish consumption advisories, and information concerning local health organizations services and resources. The survey described in this paper was conducted as part of the needs assessment effort of the NC Health Information Online project. A needs analysis is one method of gathering data on the information needs of an identified group or community. The purpose of this paper is to describe the survey findings of a unique group of potential users of the NC Health Information Online project. Results will also be useful to any other area library or organization seeking to provide health information to the older adult.

LITERATURE REVIEW

There exists little to no literature specifically related to the topic of older adults' opinions concerning the importance of different types of health information. Thus, the literature reviewed for this paper includes the topics of information seeking behavior, the information seeking behavior of the older adult, the older adult and computer use, and the role of the library. The medical, gerontological, psychological, public health, computer

science and library and information science fields were searched for information on these topics.

Information seeking behavior

Pettigrew (1998) states that a search of the literature reveals several principles of information-seeking which apply to all people, no matter who they are or what context creates their information need. Some of those principles and their respective supporting studies can be found in a review article by Faibisoff and Ely (1976):

People seek information first from their own experience, then from people like themselves. People seek out information that is most accessible. People follow habitual patterns when seeking information and use search strategies, institutions and systems used successfully in the past.

Other principles of information-seeking found in the literatures of information and library science and social psychology include:

People seek assistance, in the form of information, from sources they perceive to be the most helpful, trustworthy and reliable, but information seekers tend to use formal and institutional sources as a last resort (Chatman 1992; Harris & Dewdney, 1994).

People want emotional support and understanding from the sources they consult and these sources are considered to be helpful even if they are not accurate (Chen & Hernon, 1982; Harris & Dewdney, 1994). Certain groups are more adept than others at expressing their needs for help and accessing potential resources and the needs of those who are not adept at expressing their information needs go largely unfulfilled (Chen & Hernon, 1982; Durrance, 1984).

Dervin describes a sense-making model which presents information as subjective, cognitive and situational. Information is defined as something that is partly constructed by the information seeker (Dervin & Nilan, 1986).

An individual's situation and context help determine the information need in Sonnenwald's (1999) model of information behavior. The individual's social network influences the recognition of information need, the decision to seek information, and the selection of an information resource and access strategy.

Information seeking behavior of the older adult

Compared to the vast amount of research on information seeking behavior in general, the literature available on information seeking behavior of the older adult is sparse and there is even less literature devoted to the health information seeking behavior of the older adult. Due to the physical, emotional and social changes associated with aging, seniors have substantial needs for human services (Hales-Mabry, 1993; Leaffer & Gonda, 2000; White et al, 1999). Although older people and their families need timely and accurate information to use in problem-solving, little research is available on why seniors seek information from particular sources in certain situations or how information helps older adults (Kane, 1990).

Few studies apart from Chatman (1992), Gollop (1993) and Williamson (1997) have focused on the older adult's information needs. Chatman (1992) investigated the information world of 55 women living in a seniors' apartment building. She found the women needed information in many "collective" areas such as coping with a sense of loss and understanding the aging process. She also found that the women needed more

personal information concerning their health and financial problems. Gollop (1993) conducted in-person structured interviews with 45 African-American women over the age of 65 to determine the ways in which this population obtains health information. She found that the respondents receive health information from their doctors, the mass media, and members of their social networks. Williamson (1997) investigated the role of telecommunications in seniors' information-seeking. Her study of over 200 Australian seniors found that the three primary areas of information need are matters of health, income and finance, and volunteerism. She reports that seniors seek information from family and friends, churches and clubs and newspapers, television, and radio.

Block et al (1999) finds that although there has been a recent surge in community-based health planning, and multiple types of information including the residents' own perceptions are necessary to effectively plan programs and services to improve community health, there is little research describing the opinions of the residents. In this study, Block et al used an open-ended questionnaire which was mailed to 2,209 randomly selected households. 52.6% of their sample of were aged 65 and older. Among the residents' major categories of health concerns: insurance costs/access; access to services; prevention and health promotion; and specific health conditions.

The older adult and computer use

The use of computers by older adults and the measurement of the impact of computer technology on their quality of life and well-being has rarely been investigated. A few studies incorporating E-mail and Internet training have shown that seniors who learned to use the Internet had more positive attitudes toward aging, higher levels of

perceived social support, and higher levels of connectivity (Cody et al, 1999; McConatha et al, 1995; Sherman & Zweig, 1999).

Several studies show that seniors are fully capable of learning new computer skills, benefit greatly from the experience and continue to use their new skills long after training has been terminated (Leaffer & Gonda, 2000; Marwick, 1999). Older adults require more time to learn computer programs and make more errors in the process. However, attitudes and anxiety relative to computer use have not been shown to be predictive of computer learning and performance (Charness et al, 1992). The cognitive changes associated with aging, including slower processing speed, and declines in short term memory and spatial ability are found to likely be the cause of the difficulties that older adults encounter in learning to use computers (Kelly & Charness, 1995).

White et al (1999) suggest that the differences in computer learning and performance between young and old are largely irrelevant outside of the work environment because many older adults use their computers primarily for personal and recreational reasons. They state that this type of research is important because it should influence the design of training programs and computer systems for older adults.

Leaffer & Gonda (2000) report that Internet training for older adults has a positive impact on confidence in using computers and the Internet, in conducting health information searches online, and in sharing information with physicians, families and friends. The seniors' success enabled them to assume a more active role in their health care.

The library's role

The Medical Library Association's (1996) policy statement on the librarian's role in the provision of consumer health information states that, the librarian shall select, create, and compile consumer health and patient health information resources that are accessible to the public electronically via the Internet and other national information networks. The librarian shall act as an advocate on the local, national and international levels to promote open access to health information for the public.

Many libraries have responded to the demand for consumer health information and the MLA's policy statement, by collecting and disseminating health information in the forms of books, magazines, audiovisuals, pamphlets, databases, CD-ROMs and Internet resources.

Several articles describe the development of consumer health libraries, consumer health partnerships, and other consumer health initiatives including the public library's response (Cosgrove, 1994; Hollander, 1996; Rees, 2000; Stephenson, 2000).

Cosgrove describes the history of the Planetree Health Resource Centers which opened its first facility in the California Pacific Medical Center in 1981. At that time, even in major urban areas, few places existed for health consumers to research the current medical literature. For the general public, the most readily available health information came from media reports and patient education materials, which were distributed through physician's offices, pharmacies and supermarkets. Public libraries responded to the demand for lay health information, but budget and space considerations prevented their collections from becoming highly specialized. Hospital libraries were often closed to the public or inadequately staffed to accommodate lay users. The Planetree approach

combines the openness of a public library with the specialization of a medical library collection. The consumer's opinion is valued and selections are made by the librarian based on specific recommendations of patrons. Today, there are approximately 15 Planetree affiliated libraries (<http://www.planetree.org>) located throughout the country.

Hollander (1996) describes the cooperative partnership formed between the University of Illinois Health Sciences library and the Northern Illinois Library System to improve medical and health information services, as well as other collaborative projects between other public and academic health sciences libraries designed to make current health information available.

MLA has moved from skepticism to espousal of consumer health, and now actively promotes information services to medical consumers (Rees, 2000). The association has recently published a consumer brochure, *Deciphering Medspeak*, which defines more than 100 medical terms and lists prescription shorthand terms. MLA offered three continuing education courses related to consumer health at their 1999 annual meeting. The Consumer and Patient Health Information Section (CAPHIS) of MLA is flourishing with a large and active membership and well-attended programs at the MLA annual meetings. In addition, an upcoming conference, sponsored by the MLA and the Public Library Association will focus on consumer health information and the public library.

In July 1998, NLM in response to the increase of computers in the home and the explosion of traffic on the World Wide Web, announced a "Plan to Increase Public Access to Health Information on the Internet." The project involved 39 public library organizations with more than 200 locations with the objective of increasing public

awareness of, and access to health information via the Internet. In late 1998, NLM also created the consumer health Web site, MEDLINEplus (<http://www.medlineplus.gov>). MEDLINEplus provides links to health topics, dictionaries, organizations, publications and medical and public libraries that offer consumer health information services. NLM has also added a few consumer health journals, magazines and newsletters to its MEDLINE database in recognition of the relevance and value of the popular medical literature. MEDLINE is widely recognized as the premier source for bibliographic and abstract coverage of biomedical literature. One of NLM's latest efforts to reach the public is ClinicalTrials.gov, a database that provides information on more than 4000 clinical trials at 47,000 locations nationwide (Stephenson, 2000).

Hales-Mabry (1995) reports that older adults are emerging in an advocacy role and other services will respond to meet their needs if libraries do not act quickly. She reports that presently, only librarians perceive library services to be important in meeting the information needs of older adults. Seniors themselves, gerontologists and other service providers do not think of the library as important.

Although the library is not always considered as a possible source of information for the older adult, library professionals have long sought to extend their services to them. The American Library Association's position paper on the library's responsibility to the aging emphasizes the importance of experimentation with new materials, services and innovative techniques and programs to reach the aged (Casey, 1975).

The literature reveals that there is a growing interest from libraries to provide seniors with training and access to the Internet. Local libraries often provide computers with on-line service and computer training at little or no cost (Daily-Brothers, 1997;

Stephenson, 2000; & White et al, 1999). NLM has provided grants and support to libraries and agencies interested in serving the health information needs of older adults. NLM has also instituted the "Internet Train-the-Trainer Program for Older Adults", an educational program designed to train seniors to use the Internet to access health information.

METHODOLOGY

A survey was administered to North Carolina adults aged 55 and older, who were members of one of three Senior Centers in Durham County, or who were members of the Computer Interest Club at a retirement community in Orange County, during the fall of 2000. The survey instrument focused on older adults as potential remote users of the HSL at UNC-CH and inquired about their attitudes concerning several different types of health information and the use of Internet capabilities to access health related information.

Subjects

The population for this study consisted of 64 members of three Durham County Senior Centers and 25 members of the Computer Interest Club at an Orange County retirement community in North Carolina. All of the participants are 55 or older. The original purpose of the Senior Centers was to respond to the needs of Durham's low income seniors. Today, the Centers provide fellowship, assistance with health issues, recreation, transportation, referrals to other appropriate agencies, as well as a noon-time meal to all seniors and their caregivers in the greater Durham area. The Senior Centers

chosen for this study were identified by the Council for Senior Citizens, the agency which operates the centers, as those most likely to have computer users among their members. However, it was expected that a small segment of this group was used to computers. The Orange county retirement setting is an upper middle-class, not-for-profit continuing care community which is home to approximately 325 residents. Residents' fees cover the cost of access to an on-site walk-in clinic that provides health counseling and acute and chronic disease management. In-home care for acute illness is also provided. Physical, speech, and occupational therapy are available, as are social work services. The community offers a variety of social, recreational and educational opportunities. The retirement community's Computer Interest Club was surveyed in order to add variation to the socio-economic picture as well as provide an opportunity to conduct research with a group that is highly computer literate.

Survey

Visits were made to the Senior Centers and the Computer Interest Club in the fall of 2000. In order to ensure that all of the participants were able to understand the purpose and nature of the study, their rights as respondents, and definitions of some of the survey terms, a verbal presentation was given at each gathering in addition to the distribution of the written information in the accompanying cover letter. Time was allotted for any questions before the surveys were distributed and the participants were asked to complete them. Some of the seniors requested and received assistance with the reading and completion of the surveys.

Questions developed for the questionnaire were loosely based on the Healthy Carolinians 2010 health objectives as developed by the Governor's Task Force. North Carolina's 2010 Health Objectives address the areas of access to health care, chronic disease, community health, disability, environmental health, health promotion, infant mortality, infectious diseases, injuries, mental health, older adult health and oral health. The Task Force developed the objectives through collaboration with health care providers, consumer organizations and representatives of the public.

Questions were grouped into two sections. The first section, questions 1-14, asked the seniors to rate several different types of health information from "very important" to "unimportant" using a five point Likert scale. Questions 15 and 16 requested user profile information regarding age and sex. Questions 17 and 18 asked about Internet experience. If the senior indicated that they had none, they were then finished with the survey and thanked for their time. If the senior indicated that he or she did have some Internet experience, they were asked to complete the next section of the questionnaire. The second section, questions 19-23, asked the participants to use the same Likert scale to rate the importance of different Internet capabilities (e.g., online discussion or support groups, consultation with medical experts, interaction with health plans etc.) to access health information. The survey ended with an open-ended question to allow respondents to add any comments that they couldn't express through the closed questions.

Limitations of the Survey

There are several advantages to the methodology of this study. The self-completed questionnaire can gather the desired amount of information in a brief time period. The questionnaire was short (24 questions on two pages) and did not discourage the older adults from participating. The same Likert scale was used for every question to provide consistency and reduce confusion. Closed questions do not require a great deal of writing which is difficult for some seniors to do. Closed questions are easier to analyze than open-ended ones. And finally, self-reporting is considered to be the best way to measure individual beliefs and attitudes (Robson, 1993).

There were some limitations to this survey. Closed survey questions do not allow as much detailed information to be collected as would a series of interviews or focus groups. Interviews with the seniors might have avoided the apparent confusion that a few of them expressed by assigning more than one answer to several different questions. Individual interviews held in a private area rather than the open gathering areas at the Centers would have also prevented the seniors from conferring with each other over their responses.

Another problem with the survey method and specific to this research, was that some respondents answered that all of the different types of health information were "very important". These respondents gave the same answer to every question. It cannot be determined with certainty that these answers reflect the true opinions of the seniors, or if they simply went down the page circling the first choice. Because seniors deal with matters of health so frequently, it can be argued that some of them may feel that any health information is "very important". Therefore, these surveys were judged to contain

valid responses and are included in the tabulations. In addition, it is not possible to determine how the respondents interpreted the response choice of "moderately important." It is intended to represent the neutral point of view, however, it may have been interpreted as a more positive choice by some of the respondents.

RESULTS

The survey data was gathered from the questionnaires and coded. Descriptive analysis was performed on the data to provide a general impression of the attitudes seniors hold regarding health information. Results will allow HSL staff members as well as any other organization which provides health information to older adults, to create a product that is reflective of the users' own opinions and desires.

Of the 89 members of the Senior Centers and the Computer Interest Club, 75 completed a valid survey for a response rate of 84.2 percent. Five seniors volunteered that they did not complete the survey due to their inability to see the questionnaire because of forgotten reading glasses or medical difficulties. Four surveys were returned blank with no explanation and five surveys contained several duplicate answers or other conflicting responses which indicated that the respondent did not understand the questions.

Sixty-one or 81.3 percent of the seniors are female and 14 or 18.7 percent are male. Thirty-nine (52.7 percent) of the participants indicated that they are over 75 years old. Twenty (27.0 percent) are between the ages of 70 and 75, eleven (14.9 percent) are between 65 and 70, three (4.1 percent) are between 60 and 65 and one senior (1.4 percent) is between the ages of 55 and 60.

The questions asked the respondents to rate 14 different types of health information. The following tables show the importance rankings for each content area. Table 1 shows a complete reporting of all of the data for questions 1 through 14. The ratings were determined by adding the percentages of the two positive responses, "very important" and "important" together.

Rating	Type of Information	Very Important	Important	Moderately Important	Of Little Importance	Unimportant
1	Disease	72.0%	24.0%	4.0%	0.0%	0.0%
2	Drug	75.7%	18.9%	2.7%	1.4%	1.4%
3	Physician Location	68.0%	22.7%	5.3%	0.0%	4.0%
3	Health Facility Location	58.7%	32.0%	5.3%	0.0%	4.0%
4	Insurance	69.3%	17.3%	5.3%	2.7%	5.3%
5	Nutrition	48.0%	37.3%	10.7%	2.7%	1.3%
6	Environmental Health	48.6%	36.5%	10.8%	2.7%	1.4%
7	Injury Prevention	47.3%	33.8%	13.5%	1.4%	4.1%
8	Support Group Location	45.2%	34.2%	17.8%	0.0%	2.7%
9	Current Health News	48.6%	29.2%	16.7%	4.2%	1.4%
10	Dental	43.1%	31.9%	18.1%	0.0%	6.9%
11	Exercise	38.7%	33.3%	20.0%	1.3%	6.7%
12	Complementary Therapies	36.0%	34.7%	25.3%	2.7%	1.3%
13	Alternative Medicine	44.6%	23.0%	25.7%	4.1%	2.7%

Table 1: Complete data for questions 1-14

Table 2 shows only the two positive response categories, and the corresponding total percentages. For purposes of this paper, the concept of "most important" is defined as the combination of the two positive responses.

Rating	Type of Information	Very Important	Important	Total % of Respondents
1	Disease	72.0%	24.0%	96.0%
2	Drug	75.7%	18.9%	94.6%
3	Physician Location	68.0%	22.7%	90.7%
3	Health Facility Location	58.7%	32.0%	90.7%
4	Insurance	69.3%	17.3%	86.6%
5	Nutrition	48.0%	37.3%	85.3%
6	Environmental Health	48.6%	36.5%	85.1%
7	Injury Prevention	47.3%	33.8%	81.1%
8	Support Group Location	45.2%	34.2%	79.4%
9	Current Health News	48.6%	29.2%	77.8%
10	Dental	43.1%	31.9%	75.0%
11	Exercise	38.7%	33.3%	72.0%
12	Complementary Therapies	36.0%	34.7%	70.7%
13	Alternative Medicine	44.6%	23.0%	67.6%

Table 2: Ratings by positive responses and total percentages

It is worth noting that several of the information types have high percentages of moderately important responses and ratings were affected by the inclusion of this data. It is interesting to note that the specific disease information and the information concerning drugs are rated number one and number two, respectively both with and without the inclusion of the "moderately important" responses. This would seem to indicate that seniors consistently rate these two information types as the most important.

Rating	Type of Information	Very Important	Important	Moderately Important	Total % of Respondents
1	Disease	72.0%	24.0%	4.0%	100.0%
2	Drug	75.7%	18.9%	2.7%	97.3%

Table 3: Disease and drug information including moderately important responses

Local health information such as physician, health facility and support group location and contact information as well as environmental health information is also rated very highly by the seniors. Physician location and health facility location are both rated number three while environmental health is rated number six and support group location comes in at number eight. However, when the "moderately important" responses are included the ratings are altered somewhat, as support group moves to the number three rating. This illustrates that local contact information is considered to be among the most important types of health information to seniors.

Rating	Type of Information	Very Important	Important	Moderately Important	Total % of Respondents
3	Support Group Location	45.2%	34.2%	17.8%	97.2%
4	Physician Location	68.0%	22.7%	5.3%	96.0%
4	Health Facility Location	58.7%	32.0%	5.3%	96.0%
8	Environmental Health	48.6%	36.5%	10.8%	95.9%

Table 4: Local health information ratings including moderately important responses

Information types pertaining to the concept of wellness such as nutrition, injury prevention, dental and exercise all retain their ratings relative to each other with the inclusion of the "moderately important" responses. However, the insurance information is much more dramatically affected as its rating falls from number four to number fourteen. This may be explained in part by the fact that the residents of the retirement community do not need insurance information as this expense is included in their total

fee. Insurance information received relatively high percentages in the two negative response choices, of "little importance" (2.7 percent) and "unimportant" (5.3 percent).

Rating	Type of Information	Very Important	Important	Moderately Important	Total % of Respondents
6	Nutrition	48.0%	37.3%	10.7%	96.0%
9	Injury Prevention	47.3%	33.8%	13.5%	94.6%
12	Dental	43.1%	31.9%	18.1%	93.1%
13	Exercise	38.7%	33.3%	20.0%	92.0%
14	Insurance	69.3%	17.3%	5.3%	91.9%

Table 5: Wellness information ratings including moderately important responses

Complementary therapies and alternative therapies are the two information types pertaining to non-traditional medicine. It is interesting to note that they received the highest percentages of the neutral response, "moderately important". While this had quite an effect on complementary therapies, taking it from number twelve to number seven, it surprisingly did not have the same effect on alternative medicine which only went from number thirteen to number eleven.

Rating	Type of Information	Very Important	Important	Moderately Important	Total % of Respondents
7	Complementary Therapies	36.0%	34.7%	25.3%	96.0%
11	Alternative Medicine	44.6%	23.0%	25.7%	93.3%

Table 6: Non-traditional medicine information including moderately important responses

Questions 17 through 24 pertain to the Internet, and its capabilities to access health information. Twenty-six (34.7 percent) of the 75 respondents indicated that they have Internet experience. Of those 26 respondents, seventeen (65.4 percent) have over

one year of Internet experience. One respondent (3.8 percent) has six months to a year of experience. Three participants (11.5 percent) have three months to six months of experience. None of the respondents indicated that they have less than three months of experience and five (19.2 percent) rated themselves as beginners.

		Number	Percentage
How long have you been using the Internet?	Over a year	17	65.4
	6 months to a year	1	3.8
	3 months to 6 months	3	11.5
	Less than 3 months	0	0.0
	Beginner	5	19.2

Table 7: Length of Internet experience

Questions 19 through 23 ask the seniors to rate how important different capabilities would be when using the Internet to access health information. Table 8 shows a complete reporting of all of the data for these questions. As with the data reported previously, ratings were determined by adding the two positive response choices, "very important" and "important" together.

Rating	Internet Capability	Very Important	Important	Moderately Important	Of Little Importance	Unimportant
1	National Database Links	60.0%	32.0%	4.0%	4.0%	0.0%
2	Medical Expert Consultation	50.0%	23.1%	15.4%	11.5%	0.0%
3	Health Plan Interaction	19.2%	42.3%	11.5%	15.4%	11.5%
4	Discussion Support Groups	7.7%	26.9%	30.8%	30.8%	3.8%
5	Schedule Physician Appointments	8.0%	16.0%	40.0%	24.0%	12.0%

Table 8: Complete data for questions 19-23

Ratings of Internet capabilities were not affected by the inclusion of the "moderately important" response. As Table 8 shows, none of the seniors rated links to national databases or consultation with medical experts as "unimportant".

Also significant, is the fact that online discussion/support groups have the highest percentage (30.8 percent) of a negative response choice (of little importance). This may reflect the seniors' reluctance to use chat rooms and their preference to seek medical information from authoritative figures such as physicians and other health care workers.

Finally, respondents were provided an opportunity to share any additional ideas they had about using the Internet to access health information. The majority of those responding to this question mentioned other types of health information that they would like to be able to access online. A few of their comments are provided verbatim below:

"Links to academic, aging and organizational databases with information about curricula for teaching gerontology to various disciplines in medicine, nursing, physical therapy, public health, nutrition, health education, mental health, pharmacy, etc."

"Information and details on specific doctors."

"Drug interactions and information about specific diseases and conditions that would supplement doctors' diagnoses would be most important."

"Access to current status of research on diseases and drugs."

"Very pleased and excited about the information on the Internet."

"Have used the Internet for medical information relatively little, but when my husband had a rare condition, the Internet was invaluable."

CONCLUSION

The results of this survey represent a descriptive study of older adults as a potential remote user population. The ability to locate and access those types of health information which the seniors themselves have defined as important, should be considered by the HSL and SILS in their NC Health Information Online Project. The inclusion of the seniors' ideas will help to ensure that the online content incorporates what they want and will use.

The survey results demonstrate that the older adult is most interested in disease specific and drug information. In addition, contact and location information about local health facilities, physicians and support groups is also considered very important by this population. The findings regarding insurance information may have been affected by the group of seniors already insured, who completed the survey. These results can not be considered definitive.

Another implication of this study that may be of benefit to other libraries that provide services to the older adult, is that this population may be unaccustomed to using online library services. Libraries that provide access to electronic resources may want to conduct needs analyses to determine seniors' computer and Internet training needs.

The rate of aging of the U.S. population escalates the need for programs, resources and research directed at the health education and information needs of older adults. Physicians face time constraints imposed by managed care and an increasing workload, which has adversely affected their educational role in explaining and interpreting medical information. More attention must be paid, in this connection, to the

health information needs of senior citizens, who are major consumers of health care (Rees, 2000). Informed patients who take responsibility for health care decisions and compliance achieve higher quality outcomes and lower the costs of care.

The opinions and needs of the older adult regarding health information will be considered much more important in 2010 when the first baby boomers turn 65. It can be projected that as the number of older adults increases, so will their comfort level with computers and the Internet. Computer savvy older adults are already beginning to spend more time on the Internet and much of that time is devoted to searching for health information. Less experienced seniors are engaging in training programs to help them keep up with their technologically minded grandchildren, as well as with the world around them. As they become more familiar with their computers' capabilities, they too will begin to look for medical advice, facts and support.

The results of this study may have implications for web site designers, consumer health librarians, public librarians and others who are trying to help seniors using an electronic format. Libraries have a considerable amount of competition now from other information services. Librarians would do well to customize their services to their users by providing the kinds of information the patrons have indicated that they want. After all, at one time or another, medical information will probably be the most important type of information any person will seek in his or her lifetime. Librarians who understand both this and their users will provide an invaluable service.

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Appendix A

Dear Sir or Madam:

I am a graduate student in the University of North Carolina School of Information and Library Science, currently conducting a survey about the opinions of older adults regarding health information and the Internet. I hope to discover which health content areas older adults feel are most important and which Internet capabilities are most likely to be used by and beneficial to the older adult.

The School of Information and Library Science is working together with the University Health Sciences Library on a project to determine the health information needs of the citizens of North Carolina. Your opinions could ultimately be considered in the design of a new consumer health website specifically geared to the health concerns of North Carolinians.

I hope you will take approximately 15 minutes to complete the attached survey. Your participation in this survey will help me and other project personnel to help you. Your responses will provide us with the necessary insight to design a website that will be as useful as possible to the older adult of North Carolina.

All of the information gathered from the survey will be tabulated for reporting purposes, but your individual responses will be held in confidence and will only be seen by myself and, possibly, my advisor for this project, Dr. Claudia Gollop, Associate Professor, School of Information and Library Science. The results of this survey will be tallied and discussed in my Master's paper. When this paper has been completed, all responses will be destroyed. In order to protect your privacy, please do not put your name on the survey. Your participation in this survey is completely voluntary. By returning the survey, you are indicating informed consent.

If you have any questions about this survey, please feel free to contact either myself, (919) 490-0556; Dr. Claudia Gollop, (919) 962-8362; or Dr. David A. Eckerman, Chair of the Academic Affairs Institutional Review Board, CB# 4100, UNC-CH, Chapel Hill, North Carolina 27599-4100, phone: (919) 962-7761, email: aa-irb@unc.edu.

Thank you very much for your time and effort in this study. By completing the survey, you are making a significant contribution to our understanding of the health concerns of the older adults of North Carolina. Please return the completed survey in the envelope provided to your Senior Center Coordinator.

Sincerely,

Christie Silbajoris

Appendix B

Please rate the importance of the following types of health information by circling the appropriate number:

	1-Very Important	2-Important	3-Moderately Important	4-Of Little Importance	5-Unimportant
1. Health insurance information	1	2	3	4	5
2. Information concerning specific diseases	1	2	3	4	5
3. Local health facility locations	1	2	3	4	5
4. Local support groups locations and contact information	1	2	3	4	5
5. Physician location and contact information	1	2	3	4	5
6. Current health news featured in the media (newspaper, tv, radio)	1	2	3	4	5
7. Exercise information	1	2	3	4	5
8. Nutrition information	1	2	3	4	5
9. Dental information	1	2	3	4	5
10. Information about injury prevention	1	2	3	4	5
11. Information about the environment	1	2	3	4	5
12. Drug information	1	2	3	4	5
13. Information about complementary therapies	1	2	3	4	5
14. Information about alternative medicine	1	2	3	4	5
15. Please indicate your age group	55-60	60-65	65-70	70-75	Over 75
16. Please indicate your sex:			___Male		___Female
17. Have you had any experience with the Internet?			___Yes		___No

If no, you are finished with the survey. Thank you very much for your time.

If yes, please answer the following questions:

18. How long have you been using the Internet?	Over a year	6 months to a year	3 months to 6 months	Less than 3 months	Beginner
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Please rate how important each of the following capabilities would be when using the Internet to access health information:

	1-Very Important	2- Important	3- Moderately Important	4-Of Little Importance	5- Unimportant
19. Online discussion/support groups	1	2	3	4	5
20. Consultation with medical experts	1	2	3	4	5
21. Interaction with your health plan	1	2	3	4	5
22. Scheduling appointments with your physician	1	2	3	4	5
23. Links to national health databases	1	2	3	4	5

24. Other ideas? Please comment:

Thank you very much for your time.