COMPUTER, INTERNET, AND E-MAIL USE AMONG OLDER ADULTS: BENEFITS AND BARRIERS

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An increasing number of older adults are using computers for communication, entertainment, and information. This descriptive study examined the perceived benefits and barriers encountered by 58 older adults. Benefits of computer use listed by these elders included a sense of connectedness, satisfaction, utility, and positive learning experiences. Barriers included frustration, physical and mental limitations, mistrust, and time issues. Professionals who teach and care for older adults need to be aware of the characteristics of older computer users. They also need to know the perceived barriers and benefits of computer, Internet, and e-mail use in order to tailor education and interventions to this population.

Over the past 20 years, professionals from various disciplines have examined older adults’ use of computers. Early studies explored whether older adults could be taught computer skills and whether they were able to retain what they learned and continue long-term use. The last 10 years have shown that young older adults are bringing computer skills learned from work and hobbies into their retirement. Many older adults are now using computers, Internet, and e-mail for various life activities. In 1996, just 2% of Americans age 65 and older went online, but this increased to 15% in 2000 and 22%, or 8 million people in 2004 (Fox, 2004).

Computer and Internet users are younger (Chen & Persson, 2002; Fox, 2004; Lieb, 2005; Rideout, Neuman, Kitchman, & Brodie, 2005;
Saunders, 2004), more affluent (Fox, 2004; Lieb, 2005; Rideout et al., 2005; Saunders, 2004; Staff, 2001), and have more years of education than other elderly (Chen & Perssons, 2002; Fox, 2004; Lieb, 2005; Rideout et al., 2005; Staff, 2001; Tak & Hong, 2005). Previously, older men were heavier users than older women (3:2); however, this equalized to 1:1 in 2003 (Rideout et al., 2005; Saunders, 2004). Married older adults and those living with someone else are more likely to use computers than older adults who are single, widowed, or living alone (White, McConnell, Branch, Sloane, Pieper, et al., 2002). Approximately 22% of Whites, 21% of English-speaking Hispanic Whites, and 11% of African-Americans age 65 and older reported using the Internet in 2003 (Fox, 2004).

Older adults report that family members have encouraged them to get a computer and access to the Internet. However, seniors are more likely to use a computer if a friend or an adult child uses a computer (Tak & Hong, 2005). Typically, when grown children get new computers, they give the old equipment to their aging parents (Fox, 2004; Saunders, 2004). Currently 35% of the 55 years and older group own computers. Among those with computers in their homes, 8 in 10 report use several times a week or more, and 6 in 10 report daily computer use (SeniorNet, 2001). The United States Bureau of the Census and the National Center for Health Statistics have reported that 76% of seniors are self-taught Internet users, and almost half (46%) have been surfing for more than five years (Greenspan, 2003).

New computer users face various difficulties, and sometimes they doubt their ability to learn and become frustrated at the beginning of the learning. Personal one-on-one instruction and computer mentors who provide step-by-step printed instructions or use computer games to teach basic computer skills have provided the best outcomes (Dauz, Moore, Smith, Puno, & Schaag, 2004; Nahm & Resnick, 2001; Saunders, 2004; White & Dorman, 2001).

Accepting the challenge of learning a new skill gives older adults a sense of accomplishment and feelings of confidence after computer training. Many feel the learning process is enjoyable, and it helps keep their minds active while they are having fun and accessing new information related to their personal interests (Bruck, 2002; Clark, 2002; Hendrix, 2000; Hill & Weinert, 2004; Nahm & Resnick, 2001).

Of older computer owners, 70% report having Internet access from home. The Pew Internet and American Life Project that surveyed older adults in 2000 and again in 2004 found that Internet use by “wired seniors” increased drastically over that period. Time spent online
ranges from 3 to 10 or more hours per week, averaging 5 hours per week. Seniors get Internet access and go online to access friends. They are eager to learn to use the Internet and once online are just as enthusiastic as younger users (Fox, 2004; Vanderwerker & Perigerson, 2004; White et al., 2002). Unlike younger users though (Moody, 2001), older adults do not take time away from face-to-face interactions with others. Instead they decrease use of television and radio and see the Internet as a replacement for the library. They tend to not visit mass media sites but use search engines to navigate to sites of interest (Hilt & Lipschultz, 2004).

E-mail is the favorite computer activity in the 55 and older age group who use it for social contact through personal correspondence (Fox, 2004; Hilt & Lipschultz, 2004; Mann, Belchior, Kemp & Kemp, 2005; Nahm, 2003; Saunder, 2004; SeniorNet, 2001). Almost all older Internet users have sent and received e-mail. In fact, 94% of senior Internet users have sent or received e-mail compared to 91% of Internet users of all ages (Fox, 2004). Finding information on the computer is also a favorite activity of older computer and Internet users (Mann et al., 2005; Saunder, 2004; SeniorNet, 2001; Tak & Hong, 2005). Information searches using Google and accessing sites for news and weather, genealogy, hobbies, and travel information top the list (Fox, 2004; Mann et al., 2005; Saunder, 2004).

Seniors are also starting to use the Internet to find financial information and do online banking (Fox, 2004; Tak & Hong, 2005). Online shopping and auctions allow seniors to access services they might not be able to get to in person. Among online seniors, 47% report they have bought something on the Internet (Fox, 2004).

Computer technology, other than Internet and e-mail, that seniors engage includes word processing (Saunder, 2004), document writing (Mann et al., 2005), playing games (Fox, 2004; Saunder, 2004), and doing crafts (Saunder, 2004). Contacting agencies or programs about services, performing volunteer work, making a phone call online (9%), and sending instant messages (28%) have also increased since 2000 (Fox, 2004).

More than two-thirds (68%) of online seniors and 21% of all seniors have looked up health information online, pursuing a wide range of issues. Looking for information on prescription drugs is one of the top reasons seniors use the Internet for health information, but only 5% say they buy prescription drugs online (Fox, 2004).

Those who are 50–64-years-old trust the Internet more than other traditional media sources, while adults over 65 years of age do not
trust online sources. Even though they do not trust online information, most do not check the source of health information they find on the Internet (Rideout et al., 2005).

Older adults are using computer technology for communicating with family and friends via e-mail, enjoying computer software for entertainment, and searching Internet Web sites for information on personal issues and health. However, we know little about these users or the benefits and barriers they encounter. One study (Clark, 2002) found that barriers to computer and Internet use were related to personal and other limitations. For example, elderly people felt communication was limited because all responses have to be typed, which does not allow for long, detailed conversations (Clark, 2002). Others stated that they did not access Internet sites or chat rooms because they did not trust the sites and did not want to take the time to develop that trust. They also said that their feelings get hurt if they are not noticed in a chat room (Clark, 2002).

Social support has been reported to be the main benefit of online communication with friends, family, and companions (Bradley & Poppen, 2003; Bruck, 2002; Clark, 2002). Using computers for entertainment, the Internet for information, and e-mail for communication helps older adults feel less isolated and lonely (Clark, 2002; Fogel, Albert, Schnabel, Ditkoff, & Neugut, 2003; Nahm & Resnick, 2001). Professionals who teach and care for older adults need to be aware of the characteristics of older computer users and their actual and perceived barriers and benefits of computer, Internet, and e-mail use in order to tailor education and interventions to this population. The purpose of this descriptive study, therefore, examined how and why older adults use computers and what benefits and barriers they encountered.

**DESIGN AND METHODS**

**Sample**

A convenience sample of 58 older adults was obtained from members of SeniorNet (2001), a computer learning center in a Southern state. To be included, a person had to be age 60 or older and an Internet user for more than one month. Participant recruitment and data collection was conducted after approval from the Institutional Review Board. If a potential participant met the inclusion criteria, he or she was asked to participate. Participants completed survey questionnaires and returned them in a sealed envelope to the research team either in person or by mail. They received $5 when they completed the questionnaires. The response rate was 52%.
Measurement

An Internet use form assessed elders’ Internet activities including frequency of Internet use during the week, time spent per visit, experience of learning how to use the Internet, types of online activities, Internet use for seeking information, perceived usefulness of online information, and barriers and benefits of Internet use. The form consisted of Likert-type scale items and open-ended questions related to Internet use experience. A personal information form was used to collect information on demographic and illness-related factors including age, ethnicity, financial status, educational level, marital status, illnesses, and comorbidities. Frequencies, mean, and ranges were used to describe Internet activities of the older adults. Short answers and comments were categorized as benefits or barriers of Internet use.

RESULTS

The adults in the sample ranged in age from 59 to 85 years with a mean of 71.1 years. There were 21 males and 37 females. Educational levels ranged from 6 to 22 years of schooling with a mean of 15.5 years. There were 44 (76%) Protestants and 14 (24%) practiced other religions. Married people were 74% while 26% stated their marital status as “other.” The majority were Caucasian; only one respondent was African-American. Of the sample, 81% said their financial status “met their needs,” and 11, or 19%, stated their financial status did “not meet their needs.”

When asked what made them decide to learn about computers and the Internet, close to 90% said “my own interests or curiosity.” Almost 45% said their adult children motivated them to learn these skills, approximately 28% said “friends,” almost 21% said “my spouse,” and approximately 14% said their grandchildren were the motivating factor behind their learning about the Internet.

Of the older adults surveyed, 55.17% said they used the Internet daily, 17.2% were online 5–6 times per week, 8.6% connect 3–4 times per week, and 15.5% use the Internet only 1–2 times per week. The majority (78.6%) were spending 1–2 hours per Internet visit. Only two respondents each said they spent 3–4 hours per visit and 5–6 hours per visit. Eight respondents (14.29%) said “other” when asked how long they accessed the Internet but did not specify time spent per visit.

These seniors used search engines such as Google and Yahoo to access and retrieve health information. Approximately 40% said they visited Web sites recommended by family or friends while only 17%
said they visited Web sites recommended by health care professionals (see Figure 1).

Approximately 50% felt the information they found on the Internet was “quite a bit” to “extremely” helpful in terms of gaining new knowledge about their diseases, medical treatment options, and drug therapy. However, almost 70% thought the information helped “a little” or “did not help” them learn new technology or improve their self-care skills. When asked how helpful the information found on the Internet was in terms of finding new resources for exercise, diet, or support programs, almost 82% said “a little” or “not at all.” More than half the respondents rated the information retrieved on the Internet only “moderately reliable” (53.5%). While 32.8% said it was “quite a bit reliable,” only 6.9% rated it “extremely reliable.” Perceptions of the Web sites’ user-friendliness varied greatly among the respondents, with a small majority “neutral” on the subject. Only one respondent stated they used listserv or discussion forums like chat rooms on the Internet to get emotional support and practical advice.

Responses to the open-ended questions indicated that the positive aspects of Internet use included connectedness, satisfaction, utility, and positive learning experience. Negative aspects of Internet use were frustration, limitations, mistrust, and time issues. See Figure 2.

**Connectedness**

Using e-mail to connect with others was a favorite activity mentioned by respondents. When asked to list three positive things they
### BENEFITS

**CONNECTEDNESS**

"Keeping in touch with friends using e-mail gives me something to do at times." "E-mail correspondence with family since my hand writing is compromised (due to arthritis)." "Keeping up with old friends and making contact that had been broken or not touched for years." "I have made new Internet friends!" 

**SATISFACTION**

"Fun! Challenging. Stimulating to discover a world of information at my fingertips. I discovered that I have the ability to work the Net (and at my age!)." "Enjoyed learning how to use the computer. I feel more 'with it' and use it a lot for e-mail." "You can look for anything you are interested in and use the information as you need to. You have a world of resources to turn to. You find there are many people interested in what concerns you." "There is more information on the Internet than in most libraries. It is relatively easy to find the answer to any question. The Internet is a window to the world." "Condensed, late breaking, or current news." "Getting information on today's happenings today."

**UTILITY**

"Makes bill paying much easier." "Gives me the ability to make investment changes without going through a broker." "Helps me make investment decisions." "Helps me learn and gives me something to do at times." "I find it a source of entertainment and amusement." Exploring travel information and making travel arrangements is another favorite activity of these seniors. The Internet "helps in obtaining information and discounts for travel, coupons for motel discounts."

**POSITIVE LEARNING EXPERIENCES**

"I had never worked on a computer until I went to work. This go me interested in the Web. So now I take SeniorNet classes and I'm really enjoying them." "Before I retired I used the computer at work. After I retired I took classes in things that I did not use at work such as graphics, newsletters, and the Internet." "The only formal training in computing was a class offered by the local university, which I found too far advanced to be any use to me. What I know about computing I have either taught myself or learned from friends (including online friends)." "I learned from adult children or my own by experimenting."

### BARRIERS AND SETBACKS

**FRUSTRATION**

"Several ways to perform the same task, result in confusion and frustration." "Slowness in comprehending instructions. Cannot keep up with instructions. Did not allot enough time at home on computer. Easily discouraged when problems arise." "Frustrating—wanting to find something specific and not know how, losing things I have found and not knowing how to get them back." Technical difficulties are also sources of frustration: "Changes in computers and software happen so fast, re-learning is a constant. Instruction (on the computer) are not clear to some of us! Language and buttons aren't always 'standard'!" "It took me a long time to learn and I still can't or won't use it much." "I require more repetitions, slower pace, and a longer incubation time to learn." "I could not always find the time to practice after each lesson." "I am still working part time and feel I have not had the time to continue practices after the classes."

**FUNCTIONAL LIMITATIONS**

"Only problem of neck fatigue and spasm, my only difficulty is moderate hearing loss," "remembering/ retaining instructions to replicate the application at a later time," "at age 80, my mind is not as good as it once was," "hands stiff or numb," "repetitive use cause neck pain and carpal tunnel symptoms," and "right now I am in too much pain."

**MISTRUST**

"I am uneasy about security," "I don't like to give credit card information online," and "use of my e-mail address by undesirable users." "Kids are being seduced into chat rooms, games, etc." "Easy access for bad people to get victims." "The constant need to guard against viruses, worms, etc."

**TIME**

"Can be addictive," "Habit-forming," "Time consuming," "Time!" "Lack of time to use the computer," "Just have not gotten around to it."

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**Figure 2.** Categories and selected examples of learning and using the computer
perceived related to using the Internet, more than 30% mentioned e-mail and communication with others.

**Satisfaction**

Satisfaction with their learning experience, instructors, and instruction increased the confidence, self-worth, and self-esteem of the older adults. Almost half of these respondents reported satisfaction with the amount, availability, ease, and quickness of access to information online as one of the positive aspects of the Internet. Several respondents mentioned satisfaction with the updated and current information available.

**Activities**

The activities most often listed by these older adults included online financial services, entertainment, shopping (both buying and selling), and travel arrangements and information. Others enjoyed the entertainment the computer and the Internet offered.

**Learning**

A few respondents said that they had learned computer skills at work or through volunteer duties. Others were self-taught or taught by friends or relatives.

**Frustration**

While most respondents enjoyed their time spent doing computer and Internet activities, they were often frustrated with their learning experiences or use of the computer equipment and Internet features. Some respondents also expressed frustration at the length of time it took them to learn computer skills and their lack of time to practice lessons at home. Other sources of frustration included the computer equipment or Internet features. Half said that spam, pop-ups, advertisements, unwanted e-mails, and pornography were the greatest source of frustration for them. Others talked of frustration with information retrieval or problems with finding previously retrieved information again.

**Functional Limitations**

Physical and mental limitations prevented these older adults from using the computer more often or for longer periods of time. Also,
approximately one-third said that lack of knowledge or computer skills limited their enjoyment of this technology.

**Mistrust**

Privacy issues caused many of the older adults to avoid activities on the Internet that could put their personal information at risk for identity theft. Dangers on the Internet led several respondents to seek out new Internet carriers. The trustworthiness of the information they retrieved was also a concern of older adults. One respondent summed up this issue by saying, “Can you trust it?”

**Time Issues**

While many older adults welcomed the companionship this medium offered, others were concerned about the computer and Internet becoming “addictive” or “habit-forming.” In addition, 20% said they did not have enough time to seek information or get support through the Internet.

**DISCUSSION**

Computer and Internet use was important in the lives of these seniors. The older adults surveyed were typical of the “wired seniors” seen in other studies: they were the younger old, more affluent, and had more years of education than many elders, and most were married and Caucasian. They had been motivated to learn computer skills by adult children, spouses, friends, grandchildren, and by their own curiosity and interests. This profile is consistent with other published data that indicates older people start to use a computer and the Internet when encouraged by family members and stay connected because of access to family and friends.

Computer skills are required for most jobs and careers; thus, many adults are already proficient with computer applications. Older adults are bringing these computer skills into their retirement, and many are motivated to learn further applications related to their own personal interests and hobbies. Once motivated to learn about computers and the Internet, many of these older adults either seek formal computer classes or the assistance of family or friends. Learning by trial and error is also a common method used by this population.
Most thought that the classes were very helpful and interesting. The learning was fun, challenging, and led to a sense of accomplishment and increased self-confidence and self-esteem.

**Benefits of Internet Use**

Internet activities enjoyed by participants in this study included e-mailing friends and family, gaming and other sources of entertainment, using search engines to find information related to personal interests, financial services, travel, health, and shopping online. Besides purchasing goods and services online, this group also used eBay to sell items online. Contact and communication with family and friends topped the list of positive aspects of using Internet. E-mail correspondence with family and friends to keep in touch, reconnect with, or make new friends gave these older adults a feeling of connectedness.

Satisfaction with the availability and ease of retrieval of current information was another benefit mentioned by these seniors. They were amazed by this technology, and several said they could not or would not want to give it up.

**Barriers to Internet Use**

Spam, pop-ups, unwanted e-mail, advertisements, and pornographic material led many to seek out new Internet providers or learn methods to block such nuisances. Caution about providing personal information online and fear of identity theft kept them from using some of the services provided by the Internet. Fear of being a victim to online predators prevented them from participating in chat rooms. Misleading or erroneous information led these adults to question the trustworthiness of Internet sources of information. Others feared that the computer would be habit forming and might consume valuable time that would be better spent on face-to-face interactions.

Lack of time to spend using the computer and the time it takes to use this technology are perceived barriers to its use. Some of these adults said their life and activities do not allow them time to spend using the computer. Others talked about their lack of patience with how much time computer activities took.

**CONCLUSION**

Professionals should make the most of this opportunity to reach older adults who were not as easily accessible before computer
technology. Computer training, development of Internet accessible educational materials, online social support, and computer-mediated communication are among the interventions that can benefit older adults. As technology advances, professionals who teach and care for older adults need to be aware of the characteristics of older computer users. They need to know the perceived barriers and benefits of computer, Internet, and e-mail use in order to tailor education and interventions to this population.

REFERENCES


