Maliheh Saboor[1], Shima Sum[2*],
Robab Sahaf[3], Mohsen Pourghasem[4]

THE INTERNET USE IN ELDERLY PEOPLE

THE BREADTH OF INTERNET USE AMONG IRANIAN ELDERLY PEOPLE

Abstract: Introduction: The Internet may bring an opportunity for community creation. This study aimed to assess patterns of Internet use among Iranian elderly people. Furthermore aimed to clarify its impact on the time participants spend in other social activities and their life satisfaction.

Methods: Participants of this cross-sectional study were recruited through retired teacher centers. From 445 older adults participated in the study, 43 subjects were Internet users. Data collected by a questionnaire consisted of three sections including demographic questions, frequency and history of the Internet use, and 30 questions in terms of the breadth of Internet use.

Results: The most common Internet application was using the Internet for doing social activities and getting information. Regarding the impact of Internet use on the time they spend in other social activities and their life satisfaction, the majority of the respondents reported that spending time on the Internet did not change the time they spend on other activities and improvement on their satisfaction in contacting family and friends, their overall happiness, and involvement with hobbies or other interests.

Conclusion: All this suggests that it is appropriate to make older adults aware of the different effects the Internet may have, and to encourage them towards more beneficial usages, thus making the Internet an effective way to facilitate their social life.

Keywords: Frequency of Internet Use, The breadth of Internet use, elderly people

[1]   Research manager, Iranian research centre on ageing, USWR University

[2]   Assistant Professor, Discipline of Social Medicine, Babol University of Medical Sciences

[*]   Phone & Fax number: 00981112190560, Email Address: sumshima@yahoo.com

[3]   Assistant Professor, Iranian research centre on ageing, USWR University

[4]   Associate professor, Discipline of Anatomical Sciences, Babol University of Medical Sciences

Introduction

It has been predicted that by 2050, in developed countries of the world, adults over the age of 60 will outnumber children. Therefore, for the first time in human history, there will be more older people than children in the population [1]. An ageing population may be considered one of humanity's major achievements while simultaneously causing a major challenge for much of the world [2]. Creating new relationships is often one of the challenges that older adults may encounter. Ageing is accompanied by the loss of close companionship which may lead older adults to feelings of loneliness and depression and decrease in quality of life and other health problems [3,4]. The Internet opens new options for communication and may change the extent to which people are involved in community. It may bring an opportunity for community creation [5,6]. Indeed, advancement in computer technologies and Internet use have changed the way many individuals live, work, play and communicate [7,8].

While the Internet is not very old, it has had a great effect on society in many ways [9]. The Internet has the potential to overcome time and spatial restrictions, thus providing the opportunity for isolated people to improve social networks [10] and provide a virtual community to supply the needs of members for communication, information, and entertainment [11]. With the advent of computer-mediated communication, elderly people have access to a network of supportive relationships through online interaction [12] and social lives [13]. It may provide a neutral level where seniors can stay engaged in topics that interest them and place themselves in a network of other individuals with similar interests [14]. The Internet is an important resource for health information, among older people [15]. Research shows that using the Internet might be more beneficial for older adults. McConatha found that using the Internet has some benefits for nursing-home residents who were taught to use this technology, including increased level of life satisfaction, mental functioning, activities of daily living, and reduced level of depression [16].

Using the Internet involves basic understanding of how a computer works, how databases are organised, what information is available, how documents are structured and stored, and how they are accessed or requested. These activities occupy a high-level of cognitive activity including memory, reasoning, attention, learning and problem solving, and use of fine motor skills [17]. These are the very areas in which elderly people typically experience decline. Despite these challenges, over time, older people who are computer naive gradually develop strategies and skills for using the Internet according to their abilities, experience and available physical resources [18].

However using the Internet has significant value for elderly people, there is often a disparity between the perceptions of older people and those who provide services for them which needs more consideration. These services have mostly involved the provision of information (e.g., health information) and/or the development of Internet skills [19]. There exists a strong dissection within the literature about how elderly people

use the Internet and what is its effect on their social life and their satisfaction. One argument raises: if people spend more time using the Internet, what other activity is given up? Conversely, it can be argued that using the Internet does not necessarily suggest that an individual is alone. In reality, it may assist social activity that replaces otherwise low-interaction or private activity [10].

Recent research on the psychological [20], educational [21], and social consequences of Internet use found that online behavior is a complex activity that differs widely among individuals. This disparency in our country, Iran, might be deeper. Because it is a new tool and the majority of our older population are not familiar with this technology. Therefore, this study aimed to assess the frequency, history and application of the Internet use among Iranian elderly people. Furthermore aimed to clarify its impact on the time participants spend in other social activities and their life satisfaction.

Methodology

Most of studies of Internet use have showed that those with higher education and incomes have larger access to the Internet; which is commonly referred to as the digital divide [22,23]. Therefore in this study participants were chosen from those over 60 who were retired teachers. Results of Iranian Center of statistics in 2012 showed that only 8.7% of the population 45 – 64 years of old are Internet user and for those over 65 usages was just .5% [24]. We hoped that we could find more Internet users from this educated population; however the number of users was still low.

Participants of this cross-sectional study were recruited through retired teacher centers and interviewed face to face or over their home phones over a 6 months period. For some of them, study measurements were posted by mail. From 445 older adults who participated in the study only 43 subjects were Internet users. The study was approved by the Ethics Committee affiliated USWR University. All respondents' information was anonymous. Participants answered a questionnaire which took approximately 10 minutes to complete. The questionnaire included items that measured variables relevant to demographic status and measures of Internet use.

Three measurements were used to measure level of Internet use in participants including frequency and history of Internet use, and the breadth of Internet use. Frequency and history of the Internet use distinguishes between users according to the frequency of the Internet use on hours and days per week, weeks per the previous month and years of the Internet use [25,26]. The third part of section two was the Breadth of Internet use which examined the range of applications for which respondents used the Internet. Shklovski and Kraut's the Breadth of Internet use scale was applied on a 4-point scale (from never to several times a day) to find different use patterns of the Internet [25]. In this study due to some cultural barriers 5 out of 27 applications of Internet use were removed and 8 new applications were included. Respondents were

asked to indicate the extent which they used 30 Internet activities on 5-point scales from never to most of the time. It has been reported that these items can be reduced to five types of Internet use: finding new people, entertainment, commerce, communication and seeking information. The published reliability coefficient for this scale ranged from 0.95 to 0.79 Cronbach's Alpha[27].

Two more questions were asked regarding the impact of Internet use on the time participants spend in other social activities and their life satisfaction. Data was analyzed by descriptive statistics; t-test and one-way ANOVA, Spearman's rank correlation and a series of Hierachical multiple regression equations

Results

As mentioned in methodology from 445 older adults 43 subjects were Internet users. Mean of age was 63.23 ± 6.95. Participants included 23 males. The majority (95.3%) of respondents was married. Most of the respondents (90.7%) lived with their spouse/partner and children and only 4.7% lived alone. All lived in a home or unit that they owned in the city. Educational achievement was distributed across levels, indicating that nearly 80% completed some higher education. Regarding years being retired the mean was 5.72 ± 4.6. Nearly all (86%) of the participants most often used a computer at home, 4.7% at work and 2.3% at coffee net. 20.9% of the participants reported disease which produced limitations on their activity of daily living.

Regarding the frequency of Internet use results showed that 20.9% of the respondents used the Internet less than 4 hours per week, 25.6% reported between 4-10 hours per week, 34.9% of them used 10-16 hours per week, and only 18.6% more than 16 hours per week. Nearly half (48.8%) of the respondents had used the Internet between 2 to 4 years; 27.9% more than 7 years; 16.3% less than 1 year and only 7% had used the Internet between 5 to 7 years.

T-test result showed that men spent more time on the Internet ($t = 2.08$ & $P = .04$) than women ($M = 2.96 \pm 1.33$ & 2.20 ± 1.01 respectively). The ANOVA revealed a significant difference between histories of Internet use based on with whom subjects live which participants who lived alone had a higher mean ($F = 3.66$ & $P = .035$).

Frequency and distribution of the Breadth of Internet application (using the Internet for specific purposes) are shown in figure 1 and table 1 which shows the most common Internet application was using the Internet for getting information and doing social activities. The highest means (scores range from 0 to 4, with higher scores indicating higher levels of the variable) were getting information about hobbies ($M = 3.79 \pm 1.56$) and communicating with friends NOT in their local area ($M = 3.02 \pm 2.13$) (figure 1 & table 1). As result showed more than one third of the participants never used the Internet to look for medical or health information and only 9.6% reported using this technology for this purpose mostly. Mean distribution of five types

of Internet use was as follows: communication (1.93), seeking information (1.80), entertainment (1.35), commerce (1.12), and finding new people (.88). Therefore communicating with others via the Internet had the highest mean score.

Insert Figure 1 and table 1 here

Regarding Internet applications T-test results indicated that there were significant differences based on sex. Males had significantly higher usage of the Internet to seek information and for commercial purposes than women ($t = 2.46$ & $P = .01$ and $t = 2.27$ & $P = .03$ respectively). There were significant differences in all breadth of Internet use with regard to degree ($P < .05$). This suggests that those with higher degree were more likely to use the Internet differently.

Results of Hierachical multiple regression analyses indicated hours spent on the Internet, sex and participants educational level were significantly predictors of all breadth of Internet uses. Being male ($\beta = .404$ to $\beta = .510$), with higher degree ($\beta = .413$ to $\beta = .523$) and more hours spent on the Internet ($\beta = .362$ to $\beta = .493$) were predictors of 5 dimensions of breadth of Internet use. Having a disease which produced limitations on subjects activity of daily living was predictor of using the Internet for communication ($\beta = .313$ & $P = .032$) and entertainment purposes ($\beta = .268$ & $P = .049$). Which means those with a history of disease had higher application use in the above area.

Regarding the impact of Internet use on the time they spend in other social activities, the majority of the respondents reported that spending time on the Internet did not change the time they spend on other activities (table 2).

Insert table 2 here

When asked about the impact of Internet use on life satisfaction, the majority of respondents (66%) reported that Internet use had improved their satisfaction in contacting family and friends (table 3).

Insert table 3 here

Discussion

The rapid growth of online communication and development of new media presents many new opportunities and challenges for social inclusion [28,26,29]. Little attention or effort has been given to a detailed examination of patterns of Internet use among elderly people until now. This study aimed to assess the frequency

and application of the Internet use among Iranian elderly people and to clarify its impact on the time participants spend in other social activities and on their life satisfaction.

The findings showed that using the Internet is not only a minority activity amongst the subjects but also highly stratified by demographic characteristics such as sex, age, educational background and with who elderly live. As results showed most reported use the Internet between 4-10 hours per week all 7 days of the last week and all 4 weeks of the last month for 2 to 4 year. Results of a survey of adults over 50 conducted on SeniorNet during three months of 2002, showed that they were online 10 to 19 hours (33%), and 34% reported 20 hours or more. 41% of participants reported that they have been using the Internet between two and five years and 46% reported over five years' use [30]. The Pew Centre for Public Opinion Research has carried out national surveys linked to Internet technology since 1995 with updates on an almost monthly basis. As Pew reported of April 2012, 53% of American adults age 65 and over use the internet or email. They use social networking sites such as Facebook (33% compared with 13% in 2009) and 18% do so on a typical day [31].

The main use of the Internet was primarily for interpersonal communication. This was followed by: seeking information, entertainment purposes, commercial purposes and finding new people. The results reported above suggest that the Internet facilitates social interaction through its use as a communication tool. Russell in her study in Australia reported that the majority of participants made broad use of the communication and information functions of the Internet to enhance their connections with friends and family and their engagement with wider social networks [32]. Hilt and Lipschultz (2004) reported that each participant used email to communicate with friends and family [33]. In Gietzelt's study most of the time was spent in finding information on the World Wide Web, sending emails and, banking/finance matters [34]. Adler also reported that 72% of online seniors exchange emails or access news and reference information [35]. According to Selwyn (2003), the most popular application of the Internet was sending and receiving emails; this was followed by searching for information on goods and services [36].

As reported in these result, using the Internet for getting information about products participants might want to buy was one of the most common Internet usage; however, only minority of them stated that they used the Internet for commercial purposes. Elderly people can access many resources to buy from the Internet without leaving their homes, therefore it was predicted that the level of this Internet application should be high. This result was consistent with Gietzelt's report that only 10% of the subjects had used the Internet for e-commerce. She mentioned that participants' reasons for not engaging in e-commerce were: a lack of enthusiasm to present credit card details over the Internet; lack of interest; and not yet having the necessity to do so [34].

Many scholars state that not all Internet activity is social [37]. Furthermore, it is suggested that people using the Internet lose touch with their community environment and reduce time spent socializing and attending events outside the home. This study investigated the impact that Internet use might have on other modes of communication, and the majority of the respondents reported that spending time on the Internet did not change the time they spent on other activities. For a minority of them (one third), using the Internet was associated with more talking to people face-to-face, and speaking on the telephone. The result supports Wellman and his colleagues' conceptualisation that the Internet has a supplementary effect on other communication modes, like face-to-face communication [38,39]. Indeed the Internet is the same as other kinds of traditional communication forms.

Regarding the impact of Internet use on life satisfaction, the majority of respondents reported that Internet use had improved their satisfaction in contacting family and friends, their overall happiness, and involvement with hobbies or other interests. The reason for more satisfaction with their life among older Internet users might be because using the Internet allows them to be more independent, while keeping them attached to a social network of friends and families, and keeping them informed about health concerns [40]. Nahm and Resnick claim that cyberspace provides a new connection to the outside world for elderly people who can enhance social communication and wellbeing of seniors [41].

Professionals, who work with and care for elderly people need to be aware of the characteristics of older Internet users, need to know the perceived barriers and benefits of Internet and e-mail use in order to tailor education and interventions to this population [42]. Universal access to this technology is one important step, but the more important goal is making this technology useable and beneficial for elderly adults. Therefore, political and academic assumptions about older people and Internet use might need to be refocused to involve them more in Internet use.

All this suggests that it is appropriate to make older adults aware of the different effects the Internet may have, and to encourage them towards more beneficial usages especially using for medical information purposes, thus making the Internet an effective way to facilitate their social life.

Limitations of the study

The sample of this study is 43 Iranian retired teachers who may not be representative of our all older adults; concerning this issue that all the samples were educated and if the rate of users in this population is low in all of Iranian older adults might be less than this number. Therefore, work in this area on the other older population is recommended.

References

1. UN. (2006). World Population Prospects: The 2006 Revision. Available at: http://www.un.org/esa/population/publications/wpp2006/English.pdf. New York: Department of economic and social affairs.

2. Blackburn, J. A., & Dulmus, C. N. (2007). Handbook of gerontology : evidence-based approaches to theory, practice, and policy Hoboken, N.J. : Wiley.pp.19-49

3. You, K.S, & Lee, H. The physical, mental, and emotional health of older people who are living alone or with relatives. Archives of Psychiatric Nursing 2006; 20 (4): 193–201

4. McCausland L, Falk NL. From dinner table to digital tablet: technology's potential for reducing loneliness in older adults. J Psychosoc Nurs Ment Health Serv 2012; 50(5): 22-6

5. Wellman, B., Quan Haase, A., Witte, J., & Hampton, K. Does the Internet increase, decrease, or supplement social capital? Social networks, participation, and community commitment. The American Behavioral Scientist. Thousand Oaks 2001; 45 (3): 423-436.

6. Colvin, J., Chenoweth, L., Bold, M., & Harding, C. Caregivers of Older Adults: Advantages and Disadvantages of Internet-based Social Support. Family Relations 2004; 53 (1): 49-57.

7. Hall, M., & Havens, B. (2001). The effect of social isolation and loneliness on the health of older women. Prairie Women's Health Center of Excellence. Available at: http://www.uwinnipeg.ca/admin/vh_external/pwhce/effectSocialIsolation.htm

8. Bargh, J. A., McKenna, K. Y. A., & Fitzsimons, G. M. Can You See the Real Me? Activation and Expression of the "True Self" on the Internet. Journal of Social Issues 2002; 58 (1): 33-48.

9. Mellor, D., Firth, L., & Moore, K. Can the Internet Improve the Well-being of the Elderly? Aging International 2008; 31(1): 25-42.

10. Lin, H.-F. Understanding Behavioral Intention to Participate in Virtual Communities. CyberPsychology & Behavior 2006; 9 (5): 540-547.

11. Wright, K. Computer-mediated social support, older adults, and coping. Journal of Communication 2000; 50 (3): 100-118.

12. Adams, N., Stubbs, D., & Woods, V. Psychological barriers to Internet usage among older adults in the UK. Medical Informatics & the Internet in Medicine 2005; 30 (1): 3-17.

13. Coulson, I. Introduction: Technological challenges for gerontologists in the 21st century. Educational Gerontology 2000; 26 (4): 307-315.

14. Ogozalek, V. Z. The Social Impacts of Computing: Computer Technology and the Graying of America. Social Science Computer Review 1991; 9 (4): 655-666.

15. Robertson-Lang L, Major S, Hemming H: An exploration of search patterns and credibility issues among older adults seeking online health information. Can J Aging 2011; 30(4): 631-45

16. McConatha, D. (2002). Aging online: Toward a theory of e-quality. In R. W. Morrell (Ed.), Older adults, health information, and the World Wide Web (pp. 21-41): Mahwah, NJ: Lawrence Erlbaum Associates.

17. Firth, L., & Mellor, D. Dilettantism in investigating the impact of the Internet on the wellbeing of the elderly. Quality and Quantity 2009; 43(2): 185-196

18. Czaja, S., & Lee, C. (2003). The Impact of the Internet on Older Adults. In N. Charness & K. W. Schaie (Eds.), Impact of Technology on Successful Aging (pp. 113-133): Springer Publishing Company.

19. ABS. (2005). Use of information technology by older people. Available at: http://www. abs.gov.au/ausstats/abs@.nsf/Previousproducts/1301.0Feature%20Article312005?ope ndocument&tabname=Summary&prodno=1301.0&issue=2005&num=&view=, Year Book Australia, Cat No. 1301.0. Canberra.

20. Shapira, N., Barak, A., & Gal, I. Promoting older adults’ well-being through Internet training and use. Aging & amp; Mental Health 2007; 11 (5): 477-484.

21. Tubin, D. Typology of ICT Implementation and Technology Applications. Computers in the Schools 2006; 23 (1): 85-98.

22. Nie, N. H., Hillygus, D. S., & Erbring, L. (2002). Internet Use, Interpersonal Relations, and Sociability. In B. Wellman & C. A. Haythornthwaite (Eds.), The Internet in Everyday Life. Oxford Blackwell Pub, pp.215-243).

23. Berner J, Rennemark M, Jogréus C, Berglund J: Distribution of personality, individual characteristics and internet usage in Swedish older adults. Aging Ment Health 2012; 16(1): 119-26

24. Iranian center of statistics, (2012). Available at: http://www.amar.org.ir/Portals/0/Files/ abstract/1389/n_IT_89.pdf

25. Shklovski, I., Kraut, R., & Raini, L. The Internet and social participation: contrasting cross-sectional and longtudinal analyses. Journal of Computer-Mediated Communication 2004; 10 (1):Article 1.

26. Howard, P. E. N., Rainie, L. E. E., & Jones, S. Days and Nights on the Internet: The Impact of a Diffusing Technology. American Behavioral Scientist 2001; 45 (3): 383-404.

27. Sum, S., Mathews, R.M. & Hughes, I. Participation of older adults in cyberspace: How Australian older adults use the Internet. Australasian Journal on Ageing 2009; 28 (4): 189–193

28. UN. (2005). Population challenges and development goals. New York: Department of economic and social affairs, p.57.

29. Solomon , R., & Peterson , M. Successful aging: How to help your patients cope with change. Geriatrics 1994); 49 (4): 41-49.

30. SeniorNet. (2002). SeniorNet internet survey [Online]. SeniorNet: bringing wisdom to the information age. Available at: http://www.seniornet.org/php/default.php,

31. The Pew Centre for Public Opinion Research (2012). Older adults and internet use [online]. Available at: http://www.pewinternet.org/topics/Seniors.aspx?typeFilter=5

32. Russell C, Campbell A, Hughes I: Ageing, social capital and the Internet: findings from an exploratory study of Australian 'silver surfers'. Australian J Ageing 2008; 27(2): 78-82

33. Hilt, M. L., & Lipschultz, J. H. Elderly American and the Internet: email, TV news, information and entertainment websites. Educational Gerontology 2004); 30 (1): 57-72.

34. Gietzelt, D. (2001). Computer and internet use among a group of sydney seniors: a pilot study. Australian Academic & Research Libraries, 32 (2). Available at: http://www.alia. org.au/publishing/aarl/32.2/full.text/geitzelt.html.

35.   Adler, R. P. (1996). Older Adults and Computers: Report of a National Survey. Available at: http://www.seniornet.org/php/default.php, SeniorNet: bringing wisdom to the information age.

36.   Selwyn, N et al. Older adults' use of information and communications technology in everyday life. Ageing and Society 2003; 23 (05): 561-582

37.   Quan-Hass, A., & Wellman, B. (2004). How does the Internet affect social capital. In M. **Huysman** & V. **Wulf** (Eds.), **Social capital and information technology** (pp.113-132). Cambridge, Mass : MIT Press.

38.   Robinson, J. P., Kestnbaum, M., Neustadtl, A., & Alvarez, A. Mass Media Use and Social Life among Internet Users. Social Science Computer Review 2000; 18 (4): 490-501.

39.   Karavidas, M., Lim, N. K., & Katsikas, S. L. The effects of computers on older adult users. Computers in Human Behavior 2005; 21(5): 697-711.

40.   Nahm, E., & Resnick, B. Homebound older adults' experiences with the Internet and email. Computer in Nursing 2001); 19 (6): 257-263.

41.   Gatto, S.L. & Tak, S.H., Computer, Internet, and E-mail use among older adults: benefits and barriers. Educational Gerontology 2008; 34 (9): 800-811.