Gerontechnology and age diversity

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L. Stenberg, M. Nordlund, H. Intosalmi, J. Nykänen, H-M. Lempola. Gerontechnology and age diversity. Gerontechnology 2014;13(1):47-50; doi:10.4017/gt.2014.13.1.006.00 **Purpose** In studies of older adults, research design still often describes ages 55+ as the target group. This is controversial for several reasons. Life expectancy in western countries, as well as the number of healthy years, has increased significantly. Statistics show that commonly the age when some kind of support is required is 75+. Research also shows that attitudes, preferences, and the use of technology are different in different age groups. More focus should therefore be put on research designs in which the target group reports a need for support in their daily life. **Method** The data for this paper were gathered from Finnish project User Centered Technology for Elderly People and Care Givers (KÄKÄTE). Two surveys (n = 1265) have been done by interviews with a structured questionnaire of people in the age range 55 to 89 years. **Results & Discussion** The goal of the KÄKÄTE Project is to determine how technology can be used to support older people in their homes and to assist caregivers in their work. The need for better usability and for devices and applications that are easier to use has been recognized for many years, and many worthwhile improvements have been introduced. However, wider and more successful adoption of technology into supportive use in daily life has been fairly slow. This paper proposes that one crucial reason for this is that the age diversity within older people is not fully understood. The age diversity of older people must be taken into consideration and manifested in future research design, if there is to be full participation by the elderly in technology developments, and if these technology developments are to contribute to the independence of all age groups of older people.

Keywords: health & self-esteem, age diversity and older adults, use of technology

According to expectations prevailing in the society, technology is expected to support the everyday life and coping of elderly people to an ever-increasing extent. Old people do and are expected to live at home as independently as possible for so long as possible with the support of home care services, and technology[1]. Technologies and services are being developed, eagerly and in abundance[2]. Compiled information on use of technology by the elderly is scarce, although the designers and developers would have used for information. In particular, little is known about the attitudes and factors preventing the elderly from using information technology.

International comparison

Statistics on technology use and uptake is scarce in the world concerning the older age groups. The statistics found most commonly look at old people as one group or in bigger cohorts than the rest of the population. The statistical unit of the European Commission EUROSTAT provides statistical information on European countries up to the age of 74[3]. Some European countries also file statistics about technology use of 74+ year old people. Finland started in 2013 to include 75 to 89 year old Finns in the survey[4]. This group is though treated as one group thus losing the differences between usage of the 75 and the e.g. 85 year old Finns. Sweden made a separate survey of the Internet use of 50-90 year old Swedes in 2009 where the sample is looked at in 10 year cohorts[5]. In the national statistics the older age group is treated as one (76+ years old in one group)[6]. The findings of the Swedish surveys are in line with the findings of the research reported here.

The findings of the survey made in the USA by the PewResearch centre were also in line with tendencies and conclusions this paper presents. The PewResearch Internet project reported on both Internet use and attitudes in five year co-

horts between the ages 65-79, but the 80+ year old were treated as one group[7].

Age diversity and technology

Several studies from the User Centered Technology for Elderly People and Care Givers (KÄKÄTE) Project in Finland support the viewpoint that the age diversity of older people should be taken into consideration. Differences can be seen between older and younger elderly people in their use of common technologies, such as payment terminals or ATMs, or their use of the Internet and smartphones[8]. Differences can also be seen in the attitudes toward what type of supportive services are preferred or considered attractive[9]. These differences are relevant for several reasons. For example, without thorough age-specific targeting, research can focus on innovations for the wrong target group: either an age group that does not yet feel the need for supportive technology or no longer has the (e.g., cognitive) capacity to use new technology to their advantage[8,9]. This easily becomes an additional factor that makes independent living and full participation a challenge. A study from the KÄKÄTE Project shows significant differences between people of ages 55 to 74 years and 75 to 80 years with regard to their willingness to purchase services that support their daily life. The age groups differ in several respects, the biggest difference being in their attitudes toward using meal services (technology-supported), entertainment services (recreation of mind), and communication technologies (e.g., video telephones)[9].

Internet use

The research data reported below was gathered through a survey executed by TNS Gallup that included telephone interviews with 600 elderly Finnish people in December 2013[10]. The sample is representative of the entire 75–89 years old population of Finland, which includes about 412,000 people. The respondents live in their own homes, were fit enough to participate in a telephone interview that lasted for on average 15 minutes. They came from both rural and urban settings and represented both blue and white collar backgrounds from different levels. Family backgrounds as well as number of children were varied. The KÄKÄTE Project and LähiVerkko Project took the initiative for the joint survey.

The survey[10] indicates, that 90% of 75-89 years old Finns have a cell phone, one-third have access to the Internet. 24% of the elderly have an e-mail address. Only 4% of the respondents admitted to having a smartphone and 3% a tablet computer.

Based on the survey, it can be concluded that computers are used most often by men, age group 75-79, living with a spouse, former managers or upper management, inhabitants of the southern most densly populated urban part of Finland. Accordingly, women belonging to the oldest age group (85-89 years of age), living alone, blue-collar or agricultural background, inhabitants of regions other than Southern Finland, use computers least often.

A large proportion of elderly people believe that they can learn to use information technology if only provided with the right kind of guidance. It is important to notice that lack of skills in using the Internet are not due to a negative attitude towards one's own abilities or learning skills.

One-third of the elderly already actively use IT but some senior citizens do not feel the need for or simply do not want to learn the new technology. As they strongly report that use is often difficult and that the elderly's needs are not considered in design, they could be more eager if the hardware and software were easier to use[11].

Respondents with access to internet

81% of the elderly respondents with access to an Internet connection claimed to have searched information on various topics from the Internet. 73% of the Internet users admitted to using online banking services. In addition to those using the services independently, this figure could include the persons whose bank accounts are handled by a relative, for example. Almost 70% of the elderly people using the Internet also use e-mail.

If the entire sample of 601 respondents is considered, we can see that only 24% of the 75-89 years old respondents use the Internet for information retrieval, 22% for online banking, and 21% for e-mail services. Thus, contrary to a common belief, use of the Internet for managing one's affairs is not very widespread among the elderly. At the same time, many public and private services have moved or are moving to the web. The survey results suggest that equality of the citizens could be in danger if online services were to suppress services offered through other channels.

Those interested know already

When asked whether they would like to use a device currently not used by them, 5% of the respondents told that they would like to have a computer, 7% a tablet, and 4% a smartphone. Two-thirds of the elderly respondents with no access to the Internet had no interest in gaining such access. Numerically, this means 188,000 people – almost one-half of the 75-89 years old population. However, every fifth (19%) respondent would like to search the web on matters of interest and almost as many (18%) would like to take care of

banking transactions online, if they had access to the Internet and received support to use it.

86% of the elderly respondents who did not have access to a computer, tablet, or smartphone did not feel the need for such devices. In this respect, there are no age group based differences between the respondents.

The majority (70%) of senior citizens who already use a computer feel that the use is sufficient and see no need for increased use in the future. To some extent, use that is more active is prevented by that approximately one-half of the elderly respondents who already used a computer considered the hardware and software too difficult to master.

Almost 50% of the respondents claimed that they simply do not want to learn any more. This unwillingness increased with increasing age. One of the key observations when reviewing survey results was that most of the elderly respondents interested in information technology had already acquired the devices and learned to use them. Senior citizens not yet interested in information technology should be encouraged in different ways and possibilities for using computers should be created.

IT-related guidance is needed

Personal computer skills guidance is likely to lower the threshold as regards trying out new technology. However, only 10% of the respondents who did not have access to a computer expressed the desire for such guidance. Of those already using a computer, significantly more admitted that guidance would be welcome – almost one-half (44%). Of the computer users who had already received such guidance, more than one-third (36%) would like additional instruction. This suggests that as computers become familiar, the interest in further education increases. The number of elderly people wishing for more guidance is actually quite large.

Those interested in computer skills training or consulting would prefer receiving it from someone close (83% of the respondents), from a peer instructor (54%) or from a community college instructor (53%). Especially those who do not yet have a computer but would like to learn how to use it would prefer being taught by someone close (88%) or peer instructor (67%).

In general, the respondents believe that the elderly are capable of learning computer skills. 79% of all respondents subscribed to the statement 'The elderly can learn to use computers in the same way young people do, as long as they get the right kind of guidance'. In particular, those who already use a computer (82%) and those who had received computer skills training (85%) support this statement. In this connection, the belief of the elderly respondents in IT education is encouraging, even though the survey show they consider computers and software difficult to use.

Of the respondents having access to a computer, 58% felt that it is difficult to keep up with the development of computers. Of those who had received computer training, as many were of the same opinion. 46% of all respondents in the age group 75-89 considered learning computer skills difficult. This opinion is supported by 40% of those who already use a computer and one-half of those who do not have access to a computer. Even in the case of respondents who had received guidance, 40% agreed to this. Therefore, more user-friendly computers and software could spark more interest.

IT skills not inevitable

43% of all respondents were of opinion that computer skills are not necessary in order to cope in the modern society. As could be expected, this opinion is mostly supported by those who do not have a computer (52% of such respondents), who have not received computer training (48% of such respondents), and the oldest respondents (48% of 85-89 year olds). On the other hand, 53% of all the respondents considered computers useful to themselves; of those who used a computer, 92% supported this opinion. Perhaps one cannot imagine or see the benefits before actually trying them out in practice.

35% of all respondents would like to keep in touch with their friends with the help of new technology. Of the respondents with access to the Internet, two-thirds (67%) would like to use it for keeping in touch with their friends. The willingness for keeping in touch is the strongest in the youngest age group (42% of the 75-79 year olds), among those living with a spouse (48%), and among those with many close relatives or friends (43% of the respondents who had 6 or more close friends).

Joys and benefits

The results indicate that most of the elderly respondents interested in information technology have already acquired the devices and learned how to use them. The challenge is to encourage the senior citizens who do not feel the need for information technology to try it out[12]. On the other hand, everyone should have the right of choosing whether to use a computer or not. It must be possible to take care of things at customer service face-to-face or over the phone, in addition to online solutions. Alternative ways

for this are required in the future as well, since aging causes various changes in the functional abilities. People who have learned to use online services in the past are not necessary coping with this in older age[13].

People's interest could be sparked by different things: some would like to keep in touch with their grandchildren living on the other side of the globe, others visit their childhood landscapes using interactive maps, some scan old photos from their family albums for the future generations to see.

As shown in this paper it is important to look at this older age group in smaller cohorts, e.g. five year intervals, and not as one group. The group is not monolithic as comes to the uptake of technology or the attitudes towards it[14]. Acquiring reliable statistics about these issues from this age group is though challenging. Data collection cannot be made on the Internet or as for example an Internet survey. To compile statistically reliable data a much larger sample size is required than of the Internet active population as Internet use among the oldest worldwide still is very rare.

The society must take into account the individuality of people as service consumers[12,13]. The readiness for development of easy-to-use devices and software is required, but other ways for providing services to the people are also necessary. Numerous senior citizens have already been left out of technology and information society. The citizens' inequality is reflected in the lack of Internet skills and the unwillingness to use ICT.

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