

Experiences and attitudes of older adults to technology for healthcare

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Abstract:

Purpose The key to producing appropriate training material that will help improve adoption and use of technology to support older adults in the community is to find out what attitude those adults have to such technology. Do they think it will improve their lives? What do they feel about new technology and how familiar are they with it? If they are not familiar with it, are they willing to learn about it and bring it into their lives? It was questions like these that led to a survey of older adults carried out in the four GRandis countries: Hungary, United Kingdom, Ireland, France and Spain.

Method A questionnaire was presented online with 23 questions, all except one of which generated quantitative answers. It was completed by 521 older adults: 62 from England, 55 from Ireland, 80 from France, and 324 from Hungary. The proportions of answers in each answer category were the main descriptive statistic but Crosstabs and Pearson Correlation Methods using SPSS were applied to the data to find interesting significant relationships between variables.

Results Half the 521 completed questionnaires were for people aged between 65 and 84. Health issues are common, with balance and risk of falling a dominant issue but loneliness was probably the most important factor, being cited in half of the sample. Almost everyone had some experience with technology and about three quarters of the sample were willing to consider using technology for all types of health services as well as using it to improve communications with family and friends. Relationships and healthcare support were also the most common areas of their lives people would like to improve and 80% of the sample were willing to learn new things. Higher levels of education tended to provide better perceptions of health but an increasing willingness to try new technologies to support their health and wellbeing as people grow older was not limited to educational level. As expected, loneliness also increases with age, as do health needs and a desire to be more active. People also had increased interest in using technology if they were more worried about being a burden on their carers.

Conclusions Taken together, we have strong evidence to suggest that older adults will engage very positively with new technology because they see how it can benefit them and are willing to put in the effort to learning how to use it. The motivation increases when people have greater concerns about their health and wellbeing, which is encouraging for GRandis because it means older adults will want to overcome barriers to adoption of technology even when those barriers may become higher.

Keywords and phrases: health, community, internet, sensors, older adults.

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1. Introduction

The key to producing appropriate training material that will help improve adoption and use of technology to support older adults in the community is to find out what attitude those adults have to such technology. Do they think it will improve their lives? What is their attitude to new technology and how familiar are they with it? If they are not familiar with it, are they willing to learn about it and bring it into their lives? It was questions like these that led to a survey of older adults carried out in the four GReandis countries: Hungary, United Kingdom, Ireland, France and Spain.

2. Purpose

Specifically, the objectives of the survey were:

- record demographic characteristics and personal information of older adults related to their needs and their health;
- explore relationships between older adults and technology;
- record the current assistance that elderly people have in household duties and compare it with what they would like;
- record the willingness of older adults to use online health and care services;
- survey the existing types of home technologies used by older adults;
- find out what are the most important things older adults would like to change in their lives.

3. Method

A questionnaire was presented online with 23 questions, all except one of which generated quantitative answers. It was completed by 521 older adults: 62 from England, 55 from Ireland, 80 from France, and 324 from Hungary. The proportions of answers in each answer category were the main descriptive statistic but

Crosstabs and Pearson Correlation Methods using SPSS were applied to the data to find interesting significant relationships between variables. Most of the questions involved ordinal answers such as levels of preference but some were categorical and one, age, was an integer.

TABLE 1
Types of variables used in this survey

Number	Categorical	Ordinal
Age	Gender, Caring Responsibilities, Area of residence, Current Assistance, Preferable Assistance	Education, Active, Health status, Accidents, Safety, Loneliness, Level of Technology, Willingness for Services, Interested in learning, Interested in Smart Gadgets, Worry about being a burden, Help of Technology

4. Results

Although the sample has a very large proportion from Hungary, the sizes for each of the other three countries are large enough to give a good understanding of the issues under exploration within each country and in general. The sample demographics cover the relevant variations with enough participants to draw reliable conclusions.

The age range is mainly between 65 and 84, with nearly half living with their spouse and just under 40% living alone. Roughly two thirds of the sample (67.6%) lives in populated areas that are more accessible socially as well as having better access to the internet and other services compared to rural areas. A similar proportion (67.2%) has a good level of education but there are enough without any that will help understand whether this is a significant issue to consider. As far as the current work status of older adults is concerned, two thirds have no work commitments (68.5%). Almost all the adults have no caring responsibilities, which suggests they are more along the continuum towards needing it themselves rather than providing it for others. For those who do have caring responsibilities, their role as secondary caregivers is most common in Hungary compared to over half the sample in Ireland that has a primary caring responsibility for a child (60%).

4.1. Older adults' support for household duties

Over half the survey sample already have some kind of help, which shows that they are good candidates for improving their support. At present, they mainly receive help for general household duties such as shopping, cooking, and cleaning and this accords in the main with the kind of help they would like to receive. For

most of the questions, there is not much difference between the countries but for this one, there seems to be a greater need for help with cleaning in France (44%).

Note that the two questions have one in common: they don't need any help currently and they do not have a preference for any additional help. Each question gets an almost identical response proportion, which shows that people are considering the questions carefully enough and answering them consistently.

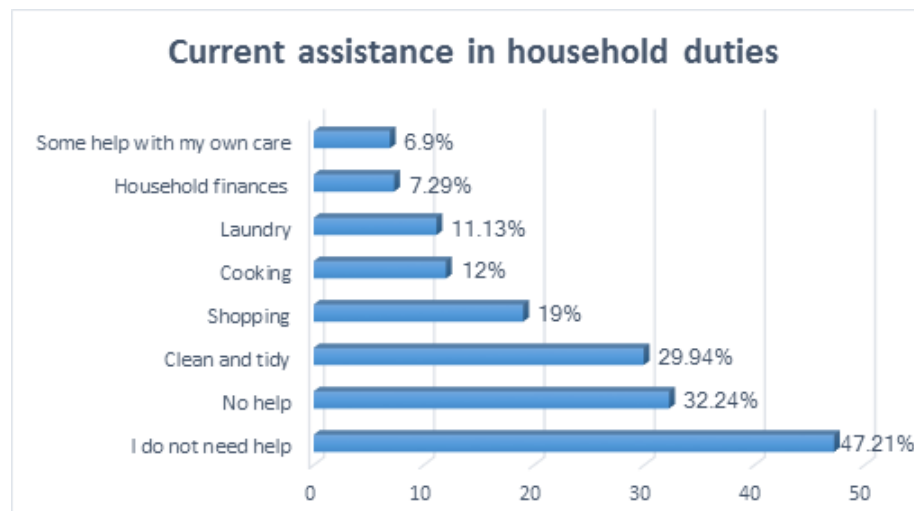


FIG 1. *Current Assistance of elderly people coming from four countries have in household duties*

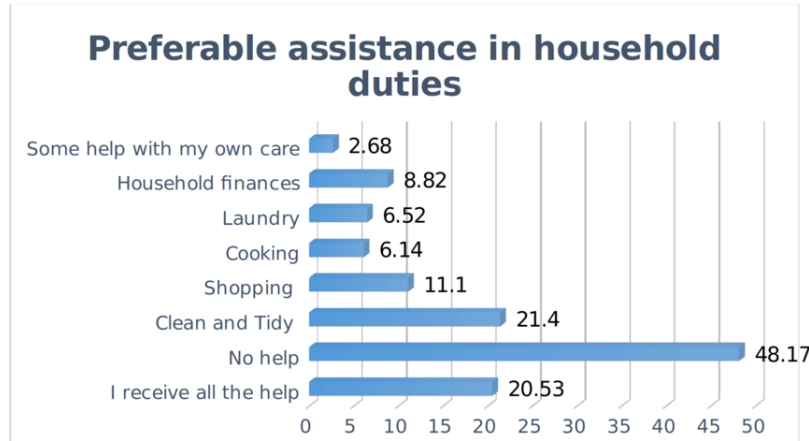


FIG 2. Assistance that elderly people, coming from four countries want to have in household duties

4.2. Health, security, and social activity

Although most people have reasonable health, a significant proportion does have some health issues (12.5%) and balance is a problem (29.7%), which puts people at risk of falling. Most of the sample across Europe feels safe at home (88.5%) but loneliness is an issue in almost half the sample; living alone seems to be a social problem rather than a security one but technology can help address both.

4.3. Older adults and technology

Almost everyone in the sample had some experience with technology but for many it was at a basic level, which means training will be crucial if and when introducing more sophisticated software and devices. The good news is that a very high majority (80.8%) were willing to learn and they had many good uses for which they would want the technology, such as staying in touch with friends and family and access to health services. Hungary was a little less enthusiastic about learning and more effort in motivating older adults might be required in this country but this was still less than one third of the sample. Overall, this shows fertile ground for introducing technology but with the right support being vital given the current low level of experience in the sample.

The infrastructure for accessing the internet is usually available already (67.37%) but surprisingly only about half this proportion in England. This may make it a bit more challenging in England but broadband and smart phone use is increasing, with more government services going online to encourage better participation. France is distinctive by more use of smart phones (77%), suggesting wireless and mobile access is more important than broadband for them.

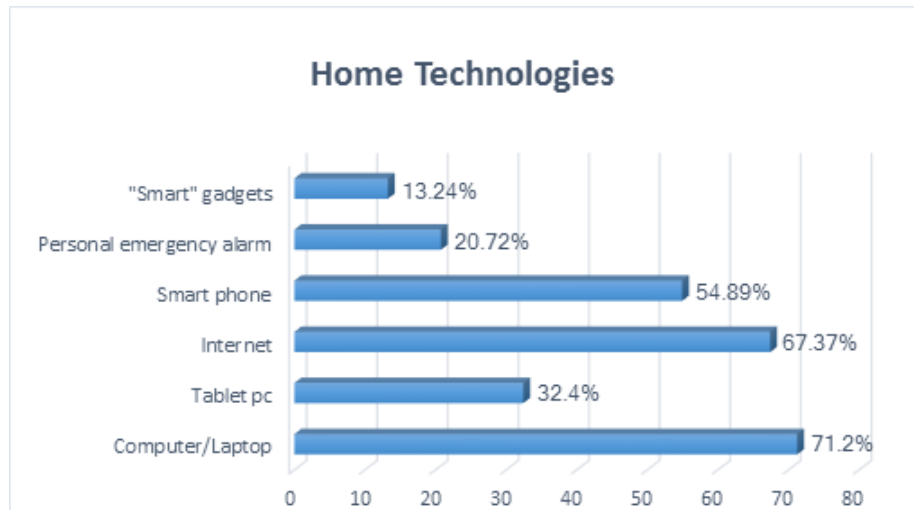


FIG 3. Different Types of Technologies in elderly's home as surveyed in four countries.

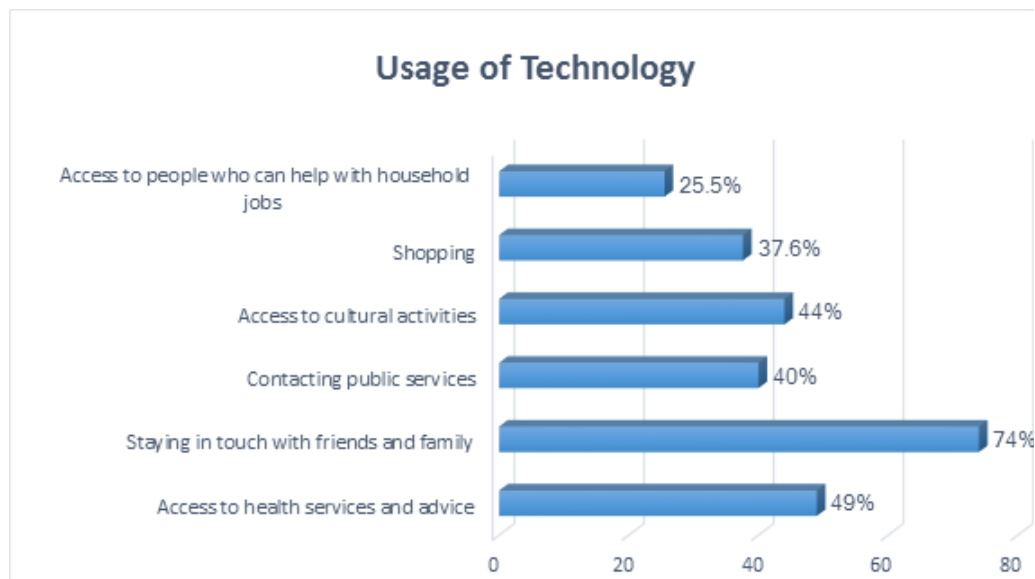


FIG 4. Usage of Technology if elderly from four countries had the right access and knew how to use it.

When exploring in more detail what kind of health services older adults might want to access using technology, three quarters of the sample were interested in all types of potential care, including online consultations and emergency calls, prescriptions, accessing results, and monitoring general health and fitness. What they did not want to do (48%) was participate in forums to discuss health matters, which suggests that the role of technology in connecting them with people is more about social rather than physical health needs.

4.4. Improving lives

An open ended question asked the older adults what they would like to change in their lives. The text was thematically analysed and produced answers within the following general headings: relationships, healthcare support, finance, level of activity, mental health, physical health, more time for leisure and enjoyment of life, better diet, and less responsibility. The themes with the greatest prevalence were relationships and healthcare support, which fits with the quantitative answers given in the questionnaire. It underlines the emerging role of technology that this survey has identified and provides the motivation for ensuring it is made available and easy to use for older adults.

TABLE 4
Different types of things that elderly are willing to change in their life

Grouping elderly thoughts	DESCRIPTION
Relationships	<p>Communication with others, Have more friends as I don't find it easy to make new friends, Need more friends, Very contented with friends and family, Meet some active people, Have a partner or someone close by, Live closer to my daughters, Need more friends, Having more activities like social cultural, I live alone without a vehicle, It's difficult to move, I feel a little excluded from society, I would like social contact by affinities</p>
Healthcare support	<p>Diagnose skin problems, Interaction with photos to gp to gauge when the kids exzema needs a new level up of cream, I would like to find a medicine available, reliable, and respectful of the patient</p>
Finance	<p>More disposable money, To be financially secure, More resources, Lower cost of living-council tax far too high</p>
Level of activity	<p>Be able to walk further than I can due to arthritis in spine, I wish I could play squash, Travelling, See more of my small family, To be able to walk better - can't walk far and I need a stick I would love to regain an ability to walk confidently again</p>
Mental health	<p>Very contented, Less stress</p>
Physical health	<p>Recovering from surgery for cancer-would like to well pass this, Parkinson's disease in my husband, Rejuvenate, My health is very bad, I cannot go out, Im bored and I suffer, I would like to move to be less isolated.</p>
Time to do things	<p>Spending more time on myself, Reading, teaching, studying, getting married, More time to enjoy all the available competing pleasures and interests To make an offshore cruise I would move into a small apartment with all the services that one may need if I can afford it I would change my job.</p>
Diet	<p>Have a better diet</p>
Being at home	<p>To be able to stay at home</p>
Level of responsibility	<p>A shorter working week as i enter my 60s, A housekeeper for our big house! We have just contacted an assist for a gardener every 15 days.</p>

5. Relationships between questions

So far, the results have shown consistent associations between whole answers, such as people wanting technology to improve access to friends and family and wanting to improve their social lives. However, we also explored any relationships between particular ranges of answers. For an indicative survey of this sort, the correlations are not expected to be very large and most were, indeed, quite weak. Nevertheless, they support the emerging picture and help confirm our conclusions. An important one for understanding the challenges to be addressed was that people with higher levels of education tend to be more positive about their health status ($p=0.000$, $r=0.277$). This implies that people with lower levels of education will require more healthcare support but our results showed that their level of technical expertise is actually better than the higher-education group ($r = -0.256$, $p < 0.05$), which bodes well for adoption of technology.

As people grow old, their health problems increase and they become more lonely, which was confirmed by our survey ($p=0.000$, $r=0.278$ for loneliness and increasing age). Online social networks would help to connect to family members, friends, and communities when health issues make it more difficult to get out and about. People are also more willing to consider using online services for accessing test results, for example, ($p=0.000$, $r=0.269$). A similar association is found for their willingness to participate in online forums ($p=0.001$, $r=0.185$) and medical consultations and help in case of an emergency ($p=0.003$, $r=0.155$). Although these are weak associations, they are all in the same direction: as age increases, so do needs, and people are willing to consider new ways of accessing those needs accordingly ($p=0.000$, $r=0.272$). The most encouraging aspect is that they will embrace unfamiliar experiences to do so and this willingness is not limited to people with higher education levels.

Getting older increases the amount of free time people have but health problems make it harder to use that time. Our survey showed a relationship between wanting to be more active as they get older ($p=0.000$, $r=0.441$), which suggests problems in trying to maintain their level of activity and thus things to do with their free time. Technology can help monitor and encourage activities and is an important area for education and training of carers and older adults.

Finally, a relationship was found between worries of the elderly (especially women) about being a burden to carers and their interest in getting help from technology ($p=0.000$, $r=0.356$). This suggests their motivation for using technology will increase as their needs increase, which encourages optimism that they will overcome the hurdles even though life in general is becoming more difficult.

6. Conclusions

In general, the survey has not shown any particular differences between countries that will have major effects on education and training of carers. The 521 completed questionnaires produced half between the ages of 65 and 84 and was

a large enough sample to produce a good understanding of people's lives in different living circumstances and educational backgrounds. Health issues are common, with balance and risk of falling a dominant issue but loneliness was probably the most important factor, being cited in half of the sample. Almost everyone had some experience with technology, albeit without regarding themselves as being adept, and 80% were willing to learn. About three quarters of the sample were willing to consider using technology for all types of health services as well as using it to improve communications with family and friends. Relationships and healthcare support were also the most common areas of their lives people would like to improve.

Higher levels of education tended to provide better perceptions of health. This suggests the bigger load on healthcare will be with people who have a lower level of education but our results do not imply less experience with technology. In fact, they suggest the opposite: there is a weak correlation between lower levels of education and higher technical expertise ($r = -0.256$, $p < 0.01$).

Another unsurprising interaction is that loneliness increases with age, as do health needs. But less obviously, and most encouraging for GRANDIS, is the finding that people's willingness to try new technologies to support their health and wellbeing increases with age. It suggests that people will try unfamiliar things as their need for help rises and this was not limited to educational level. Similarly, people's desire to be more active goes up with age and this is another area where technology can stimulate and encourage them.

The final encouragement for using technology to support older adults is the interaction between concerns about being a burden on their care network and their interest in using technology. Taken together, we have strong evidence to suggest that older adults will engage very positively with new technology because they see how it can benefit them and are willing to put in the effort to learning how to use it.

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TABLE 2
 Demographic characteristics and personal information of elderly in four European countries
 (England, Hungary, Ireland, France)

Characteristic	Frequencies	Male	Female
Gender of all countries		179(34.4%)	342(65.6%)
UK	62	26	36
France	80	28	52
Ireland	55	26	29
Hungary	324	99	225
Age	65-84(57.2%)		
With whom they live together			
Alone	203(39%)		
Spouse/Partner	244(46.8%)		
Other family members	58(11.1%)		
Anyone under 18	13(2.5%)		
Any non-relatives	1(0.2%)		
Area of residence			
City/Suburb	190(36.5%)		
Town	162(31.1%)		
Village	148(28.4%)		
Rural/Remote area	21(4%)		
Education level			
No qualifications	65(12.5%)		
Certifications normally passed by the age of 16	106(20.3%)		
Certifications normally passed by the age of 18	136(26.1%)		
Higher Education	214(41.1%)		
Work Status			
Full-time job	75(14.4%)		
Part-time job	53(10.2%)		
Unpaid-Voluntary work	35(6.7%)		
No work commitments	357(68.5%)		
Caring Responsibilities			
None	369(70.8%)		
Primary carer of child or children (under 18)	76(14.6%)		
Primary carer of disabled child or children	6(1.2%)		
Primary carer of disabled adult (18 and over)	3(0.6%)		
Primary carer of older person or people (over 65)	29(5.6%)		
Secondary carer	31(6%)		

TABLE 3
Distribution of answers about health and care services

	Yes	Maybe	No
Medical consultation and help in case of an emergency at any time	267(51.2%)	161(30.9%)	92(17.7%)
Talking to a doctor or a nurse online at an appointed time	236(45.3%)	157(30.1%)	127(24.4%)
Ordering prescribed medicines that are then sent to your home	236(45.3%)	110(21.1%)	174(33.4%)
Accessing test results online or, getting them by email	300(57.6%)	101(19.4%)	119(22.8%)
Automatically alerting clinical services through a personal emergency alarm or some other technology in your home (e.g. when you press an emergency button or if sensors detect you have had a fall)	300(57.6%)	143(27.4%)	77(14.8%)
Have health and fitness data measured and sent to your doctor or clinic	222(42.6%)	166(31.9%)	132(25.3%)
Participating in an online forum where you could discuss health matters with others	110(21.1%)	157(30.1%)	250(48%)