Perceptions of Technology Among Older Adults Residing in Rural Communities: A Cross-National Comparison of Rural Dwelling Older Adults in Canada and Wales

Dr. Shannon Freeman

Assistant Professor, School of Nursing,

University of Northern British Columbia

Dr. Charles Musselwhite

Swansea University

2016 British Society of Gerontology, Stirling, UK

Thursday July 7th, 2016

Today's Agenda

- Overview of Our Study
- Rationale and Methods
- Main Findings
- Implications for Further Study and Practice

Background

- 4 Site Study – began with leveraging our network connections
  - Milton Keynes, UK (Hannah Marston)
  - Rural Wales (Charles Musselwhite)
  - McBride, British Columbia, Canada (Shannon Freeman)
  - Regina, Saskatchewan, Canada (Rebecca Genoe and Cory Kulczycki)

Canadian Study Sites

Canadian Study Sites

Regina, Saskatchewan, Canada

- Provincial capital: Population: 237,800
  - Main industries are agriculture and mineral resources
  - Very flat plains
- Second-largest city--cultural and commercial centre for southern Saskatchewan
- Focal point in city is Wascana Lake
- In 1912, the Regina Cyclone destroyed much of the town

Regina, Saskatchewan, Canada

Canadian Study Sites

McBride, British Columbia, Canada

- Mile 90 of Railway: Population: 586
  - Main industries are agriculture and mineral resources
  - Located in Robson Valley, 210 km to Prince George, 166 km from Japser, Alberta
- Industry: Farming and Forestry
- Hospital: 3 Acute Care beds, 8 Long-term Care bed

McBride, British Columbia, Canada

Background

- In Canada there are 5 million older adults (aged 65 years or greater), a 14.1% increase since 2006
  - 1 in 4 Canadians will be over the age of 65 by 2030
  - 1 in 5 reside in rural and remote communities
- Many rural dwelling older adults are vulnerable and face 'double jeopardy'
  - Poorer access to, and lack of, community services/supports
  - Lower average incomes
  - Higher costs of living
  - Challenges with transportation/mobility
- In Northern BC, also faced with harsh winter conditions
  - Can lead to social isolation
  - Increased difficulty accessing health care

Background

- Technology use in the lives of older adults is gaining popularity
  - Embraced at a slower pace and in different ways than younger cohorts
  - Some older adults have become enthusiastic able technology users, others struggle to adopt and use technology

In rural, remote, and northern communities in Canada, the importance of information and communication technology has been equated to that of the introduction of the railroad and electricity

Study Rationale

- Technology use has been embraced as a part of daily life by older adults.
- Our scoping review identified:
  - Little knowledge and understanding of technology use and associated privacy issues and of sharing of information by older adults.

GAMES FOR HEALTH JOURNAL: Research, Development, and Clinical Applications
Volume 5, Number 3, 2016
© Mary Ann Liebert, Inc.
DOI: 10.1089/g4h.2015.0087

A Scoping Review of Digital Gaming Research Involving Older Adults Aged 85 and Older

Hannah R. Marston, PhD,[1,2] Shannon Freeman, PhD,[3] Kristen A. Bishop, MSc,[4] and Christian L. Beech, MSc[5]

Abstract

Background: Interest in the use of digital game technologies by older adults is growing across disciplines from health and gerontology to computer science and game studies. The objective of this scoping review was to examine research evidence involving the oldest old (persons 85 years of age or greater) and digital game

http://bit.ly/266R4tQ

- Understanding how older adults perceive and use/do not use technology is crucial to address the needs of our ageing society.

Sample

- **Subjects:** N=37
  - Aged 67-91 years
  - All volunteered to participate in the study
- **Sites**
  - Canada:
    - Rural: McBride, British Columbia (N=10)
    - Urban: Regina, Saskatchewan, Canada (N=6)
  - UK
    - Rural: Southwest Wales, UK (N=10)
    - Urban: Milton Keynes, UK (N=11)

Demographic Characteristics by Site

	Total Population (N=37)	Rural Sites (n=20)		Urban Sites (n=17)	
		McBride (27.03%, n=10)	Wales (27.03%, n=10)	Regina (16.22%, n=6)	Milton Keynes (29.73%, n=11)
Age					
Mean Age ± SD	77.4 (6.4)	80.6 (6.5)	74.4 (5.8)	77.2 (4.2)	77.4 (7.3)
Age Range (n)	67-89	71-89	67-84	70-82	70-89
Gender					
Female	67.6 (25)	80 (8)	60 (6)	100 (6)	45.5 (5)
Male	32.4 (12)	20 (2)	40 (4)	-	54.5 (6)
Employment status					
Not employed/retired	86.5 (32)	80 (8)	100 (10)	83.3 (5)	81.8 (9)
Currently employed	13.5 (5)	20 (2)	-	16.7 (1)	18.2 (2)
Health status					
Somewhat unhealthy	5.4 (2)	-	20 (2)	-	-
Neutral	29.7 (11)	10 (1)	40 (4)	33.3 (2)	36.4 (4)
Somewhat healthy	43.2 (16)	70 (7)	20 (2)	66.7 (4)	27.3 (3)
Very healthy	21.6 (8)	20 (2)	20 (2)	-	36.4 (4)
Marital status					
Single	22.9 (8)	20 (2)	10 (1)	33.3 (2)	27.3 (3)
Married/Have partner	34.3 (12)	30 (3)	70 (7)	16.7 (1)	9.1 (1)
Widowed	31.4 (11)	30 (3)	20 (2)	16.7 (1)	45.5 (5)
Other	11.4 (4)	20 (2)	-	33.3 (2)	18.2 (2)

Technology Use

	Total Population (N=37)	Rural Sites (n=20)		Urban Sites (n=17)	
		McBride (27.03%, n=10)	Wales (27.03%, n=10)	Regina (16.22%, n=6)	Milton Keynes (29.73%, n=11)
Have used a computer	97.3 (36)	90 (9)	100 (10)	100 (6)	100 (11)
Own a computer	89.2 (33)	90 (9)	90 (9)	100 (6)	81.8 (9)
Have played games	56.3 (18)	60 (6)	100 (6)	33.3 (2)	40 (4)
Own a video game console	8.6 (3)	11.1 (1)	10 (1)	-	10 (1)
Have the internet at home	94.3 (33)	88.9 (8)	90 (9)	100 (5)	100 (11)
Use social media sites	50 (13)	44.4 (4)	0	66.7 (4)	45.5 (5)
Use digital devices to share information					
Yes	51.7 (15)	30.0 (3)	40.0 (4)	66.7 (4)	44.4 (4)
Sometimes	31 (9)	40.0 (4)	-	33.3 (2)	33.3 (3)
No	8	30.0 (3)	60.0 (6)	0	2

Life Logging

Life Logging:

the activity of producing a continual record of your everyday life by carrying a portable camera and/or other digital device around with you

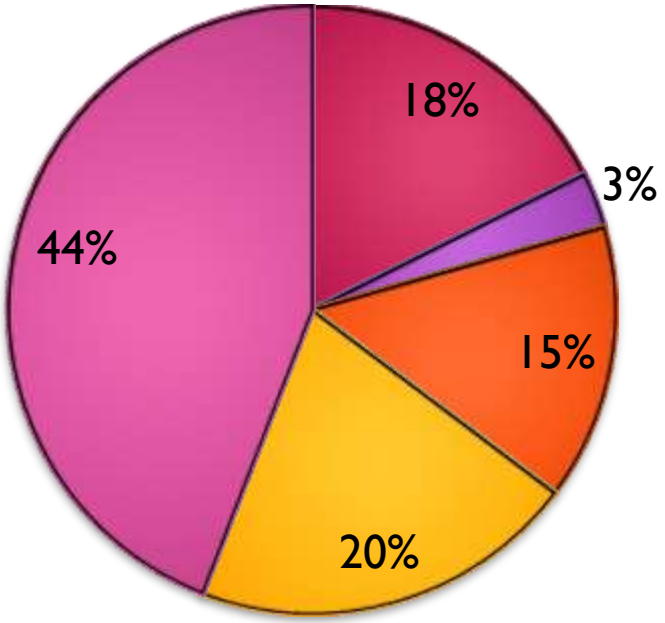
Lifelog:

a record of a person's everyday life produced by a portable camera and/or other digital device which the person regularly carries around with them

– McMillan Dictionary

- Examples:
  - Wearable Technology
  - Mobile Apps
  - Web apps
  - Standalone gadgets

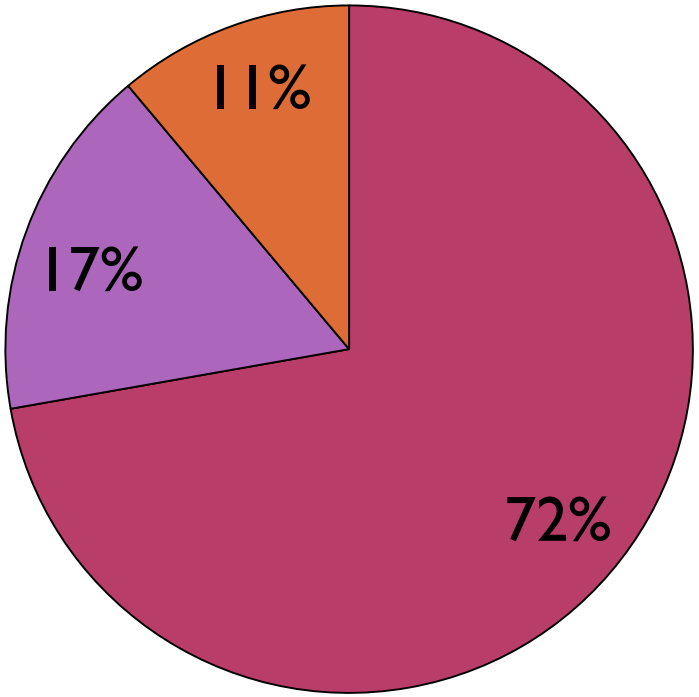
Life Logging



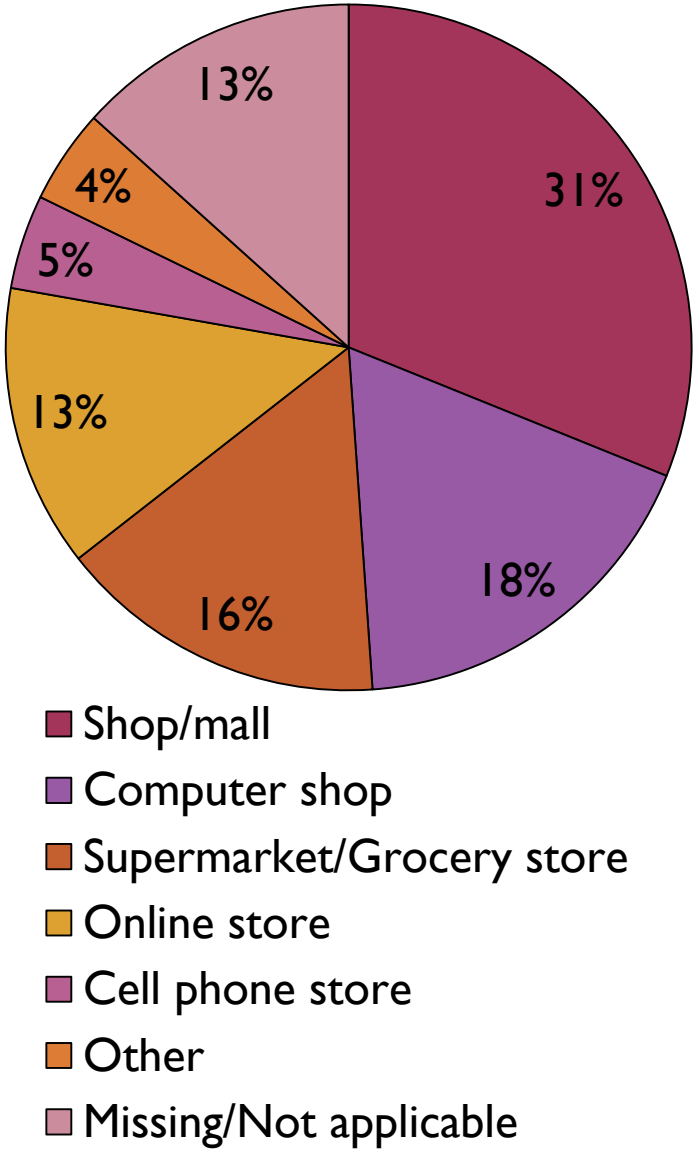
	Rural Sites (n=20)		Urban Sites (n=17)	
	McBride (27.03%, n=10)	Wales (27.03%, n=10)	Regina (16.22%, n=6)	Milton Keynes (29.73%, n=11)
Life-Logging				
Life-logging with smart phone	-	3	1	2
Life-logging with tablet	-	-	-	1
Life-logging with computer	-	-	-	5
Life-logging with spreadsheet	2	-	1	4
Life-logging with traditional methods	5	1	2	7

Computer Ownership

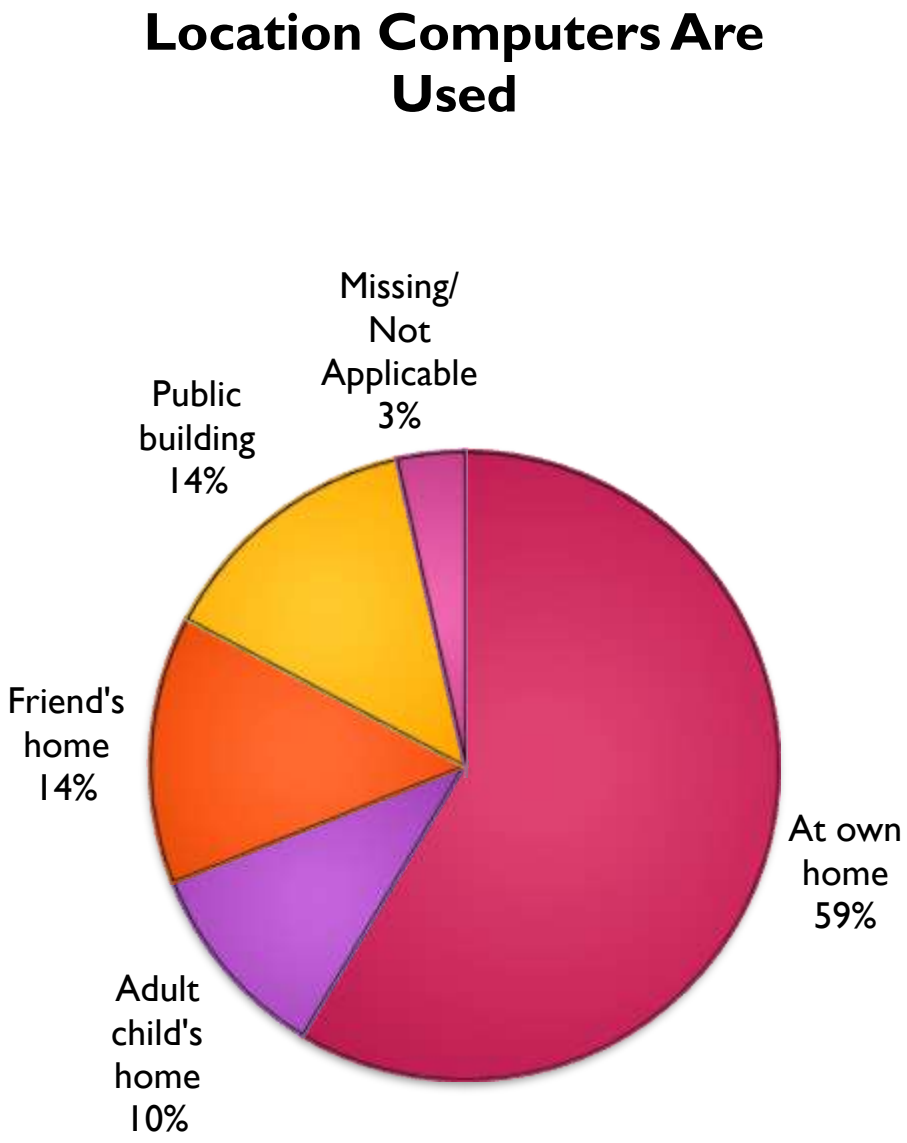
Type Owned



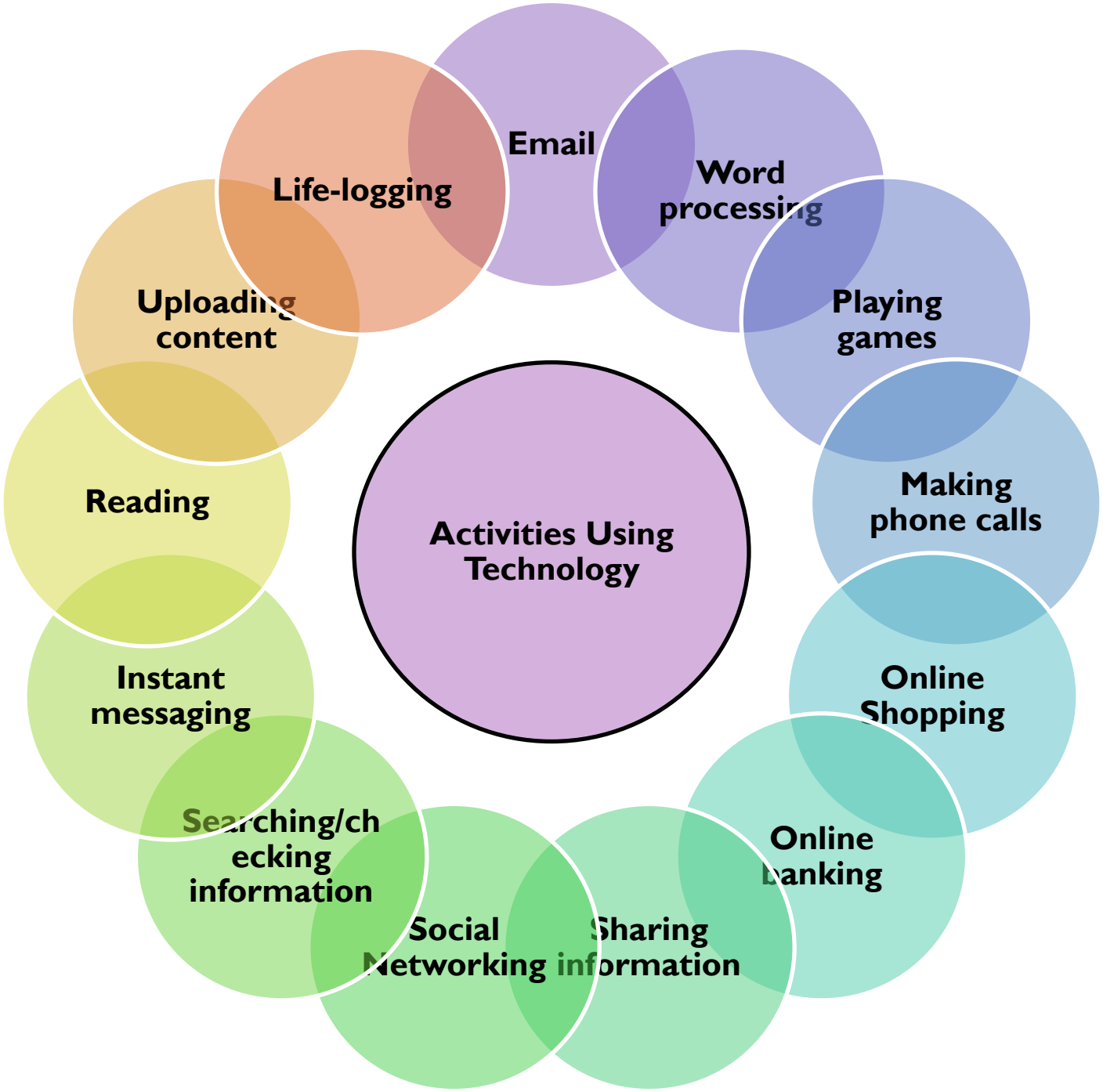
Purchase Location



Location of Computer Use



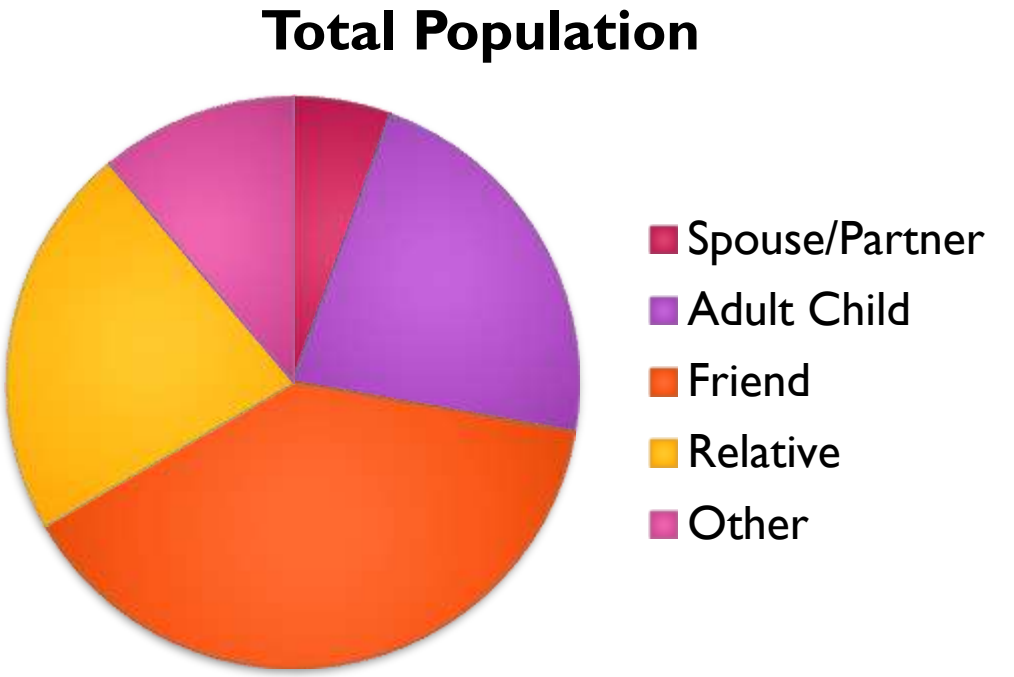
- Rural-used computers at multiple locations
  - More often connecting to family
  - More likely to use social media
- Urban-used computers primarily at home
  - More likely to be skeptical of social media, especially Facebook
  - Concerned with privacy
- Potential connections to social isolation

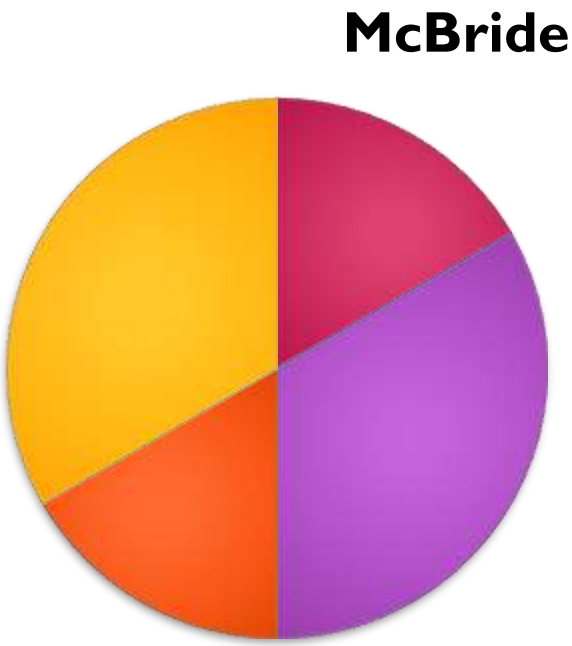

Activities Using Technology
Email
Word processing
Playing games
Making phone calls
Online Shopping
Online Banking
Sharing information
Social Networking
Searching/checking information
Instant messaging
Reading
Uploading content
Life-logging

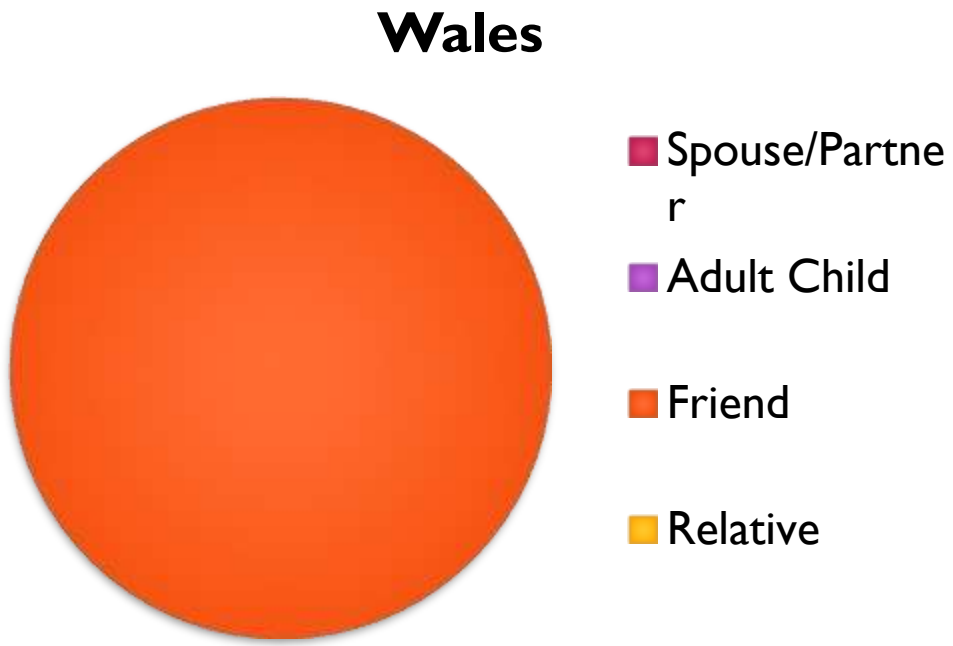
Social Media Use

	Total Population (N=37)	Rural Sites (n=20)		Urban Sites (n=17)	
		McBride (27.03%, n=10)	Wales (27.03%, n=10)	Regina (16.22%, n=6)	Milton Keynes (29.73%, n=11)
Use Social Media					
Yes	35.1 (13)	40 (4)	0	66.7 (4)	45.5 (5)
No	64.9 (24)	60 (6)	100 (10)	33.3 (2)	54.5 (6)
Years of Use					
10 years or more	35 (7)	60 (3)	25 (1)	40 (2)	16.7 (1)
5-10 years	40 (8)	20 (1)	75 (3)	20 (1)	50 (3)
2-5 years	10 (2)	20 (1)	0	0	16.7 (1)
Less than 2 years	15 (5)	0	0	20 (2)	16.7 (1)
Frequency of use					
Multiple times a day	37.5 (9)	42.9 (3)	50 (20	40 (2)	25 (2)
Once a day	16.7 (4)	14.3 (1)	25 (1)	20 (1)	12.5 (1)
Once a week	16.7 (4)	14.3 (1)	25 (1)	20 (1)	12.5 (1)
A few times a month	8.3 (2)	14.3 (1)	0	0	12.5 (1)
Less than once a month	20.8 (5)	14.3 (1)	0	20 (1)	37.5 (3)

Social Media Use

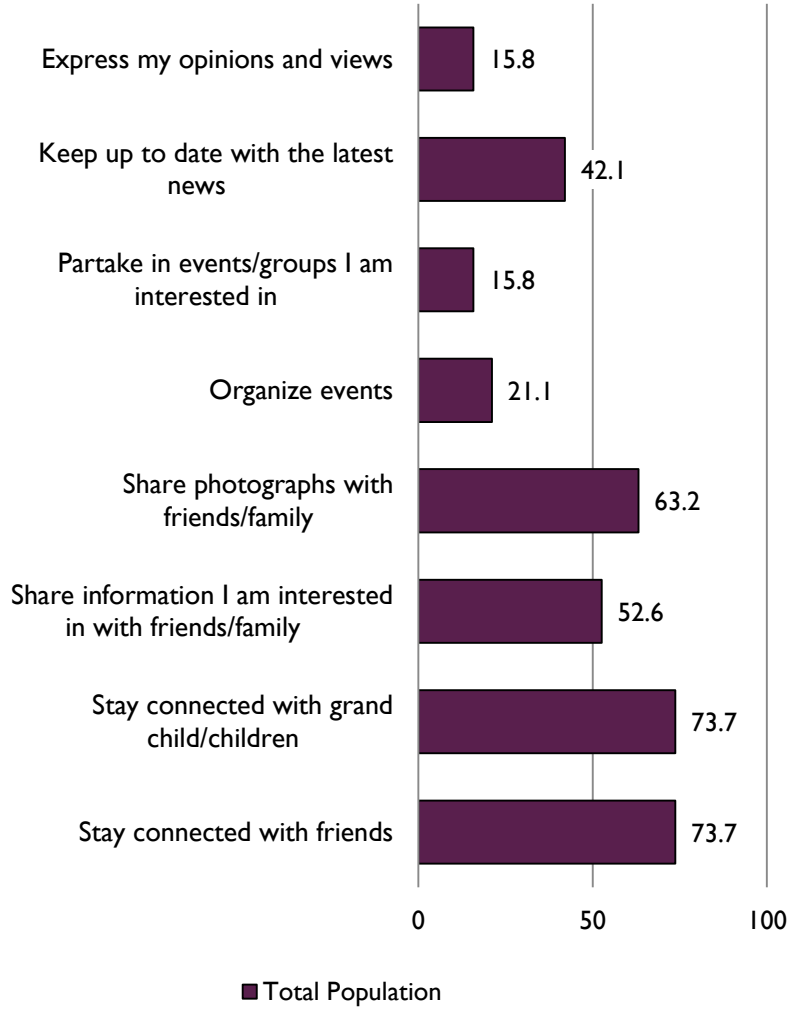




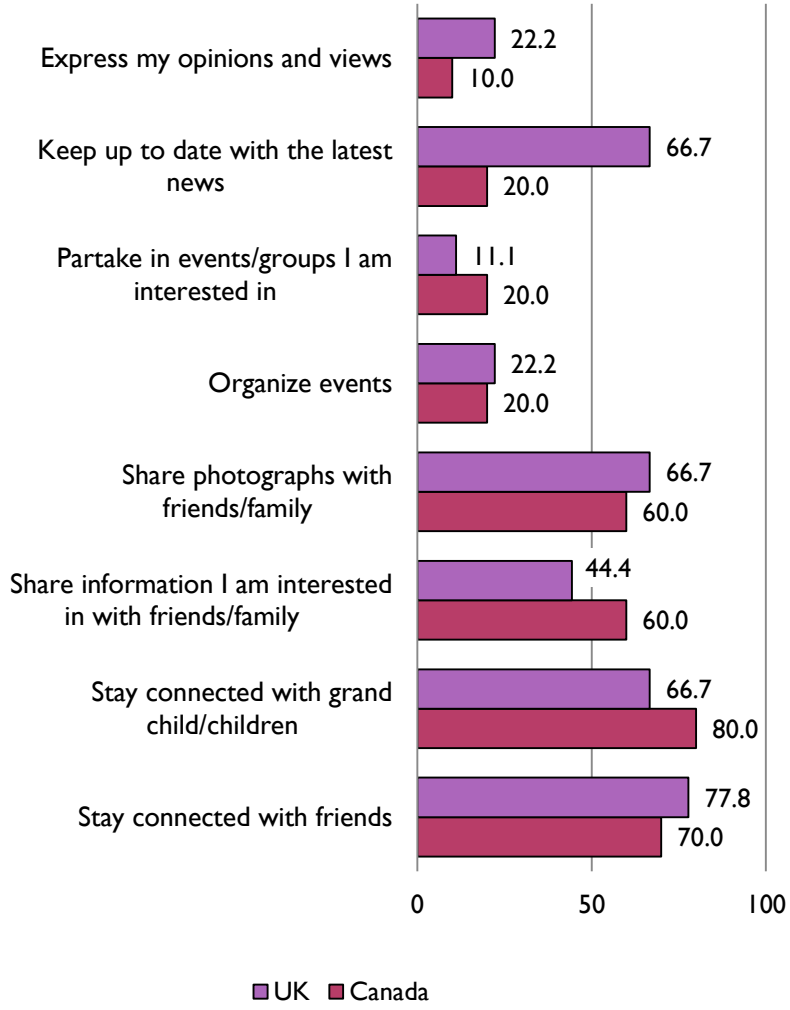


Social Media Use

Reasons For Social Media Use

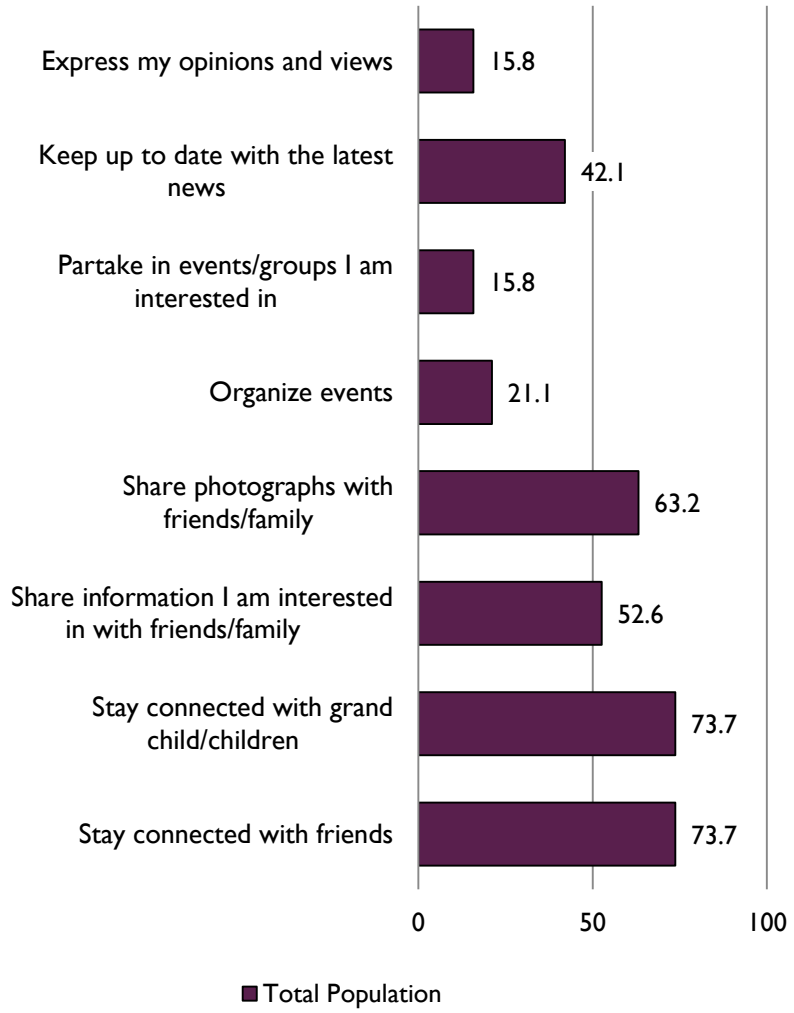


Reasons For Social Media Use by Country

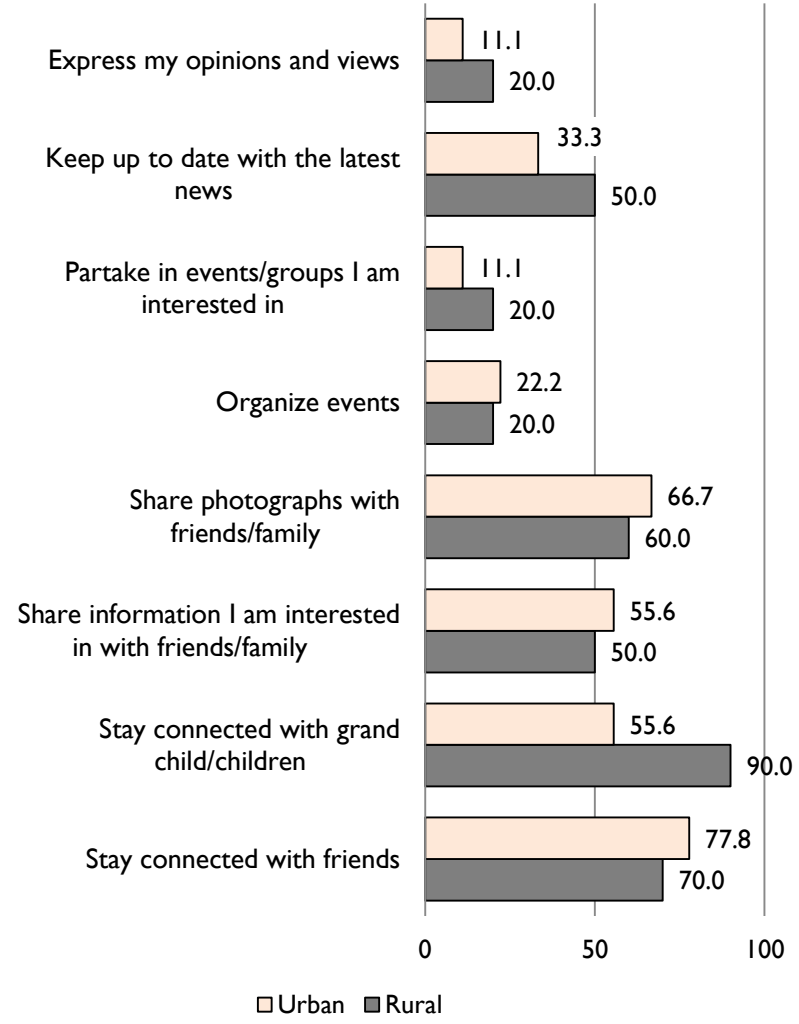


Social Media Use

Reasons For Social Media Use



Reasons For Social Media Use by Rural/Urban



Reasons they Started Using Technology:

Early Adopters of the First Computers

- Many participants reported that they had been using computers since the 1970's and 1980's
- *In the early days, they mainly used computers for their jobs*

I had my first computer in 1970. In fact I've still got my computer and my friends keep saying, "Sue, you need to buy a new one." (Laughter) Maybe I do, but it's still serviceable. I also have a laptop and I do have an iPhone as well. -MK

I've been in the IT industry all my life. I've got Apple laptops, iPod, iPad, iPhone. -MK

But I started using the computer quite a while ago, like 20 years ago. It was part of my job. I took a couple of courses in the basics of computer technology and I have been learning ever since. I have taught myself how to do databases. –McB

Enjoyable Things About Technology Use

- ***Photos***

the iPad my daughter had one and my granddaughter had one and actually what I enjoyed about it was taking pictures of our community garden. We have a wonderful community garden and I took it out and it takes beautiful pictures. -McB

- ***Games***

I play these few games in the day for memory to try and keep remembering and that. –McB

- ***Genealogy***

My family genealogy is on it, and I've got to add people to it as more children are added to it. We're awfully big, my family alone. I just discovered. I sat down and I counted them. I'm going to have 33 in my family, and that's not counting any of the spouses. That's my children, grandchildren and great-grandchildren. -McB

Reasons To Use Technology

- ***Online Shopping***

I think I spend a lot of time on my iPad, a lot of time, like looking up thing, just on Google and ordering things, ordering books or Lego sets, ordering Lego things. -R

- ***Online Banking***

I also do my banking online and I also do my accounts online except for the ones that I can't set up. One of those is group medical you can't set up it seems. -R

- ***Travel***

If I'm going to get a journey or that- well, I bought myself a sat nav, so I put it in that. I would Google it as well because I wouldn't depend on the sat nav 100%, just in case. Or if I'm redirected somewhere or whatever it is. I use a MacBook as well. There's three things for a journey. There's the Mac, there's the Google and there's the sat nav. -MK

Reasons To Use Technology: **Having a Cell Phone for Safety**

- Participants in Canada and Milton Keynes recognized the benefits cell phones
  - However, this was not highlighted by participants in Wales

Somethings are good for safety but I like the idea of having something like that to warn you. I work in the garden a lot. The other day, I fell down … the fork hit me on the way down. Then if I had it with me, like a cell phone and I put it in your pocket in case you bang it or you lose it or something. -R

I have an ancient, an ancient, and I only use it when I go walking as kind of a safety device because I just don't bother. -R

Reasons To Use Technology: **Having a Cell Phone for Safety**

- More often, children identified and encouraged strongly the older adults need for a cell phone
  - However, this was not highlighted by participants in Wales

It was the bright idea of my son. I had a mini stroke. . . . . ever since, they're always frightened, my kids now, of a recurrence. So, my son gave me a cell phone, his old one, which I used right away, or more or less. I think, they decided that I should have one, because I did get a few dizzy spells. So, now I just use it. -McB

Reasons To Use Technology:
Having a Cell Phone for Safety

- Focus on importance of cell phone for safety when driving a vehicle in Canada
  - However, this was not highlighted by participants in the UK

I got the cell phone because my kids kept thinking something was going to happen to me. I said, "Well you know if I have a breakdown on the highway, we managed for 70 years for God's sake by just stopping someone and they'd help you. But now, "Oh my God they could murder you." So this was supposed to be a safety element to keep peace in the family. -McB

I do have a cell phone that I never use it just stays in my purse and I pay $11 a month for it. But anyway in case I have a breakdown or something I am supposed to contact the kids you know and of course there is no cell phone [reception]. You can't get anything between here and Prince George -McB

Reasons To Use Technology: **Wearable Technology for Safety**

- One participant discussed the value of wearable technology to promote safety for persons with dementia
  - Participants in Wales more often discussed the importance of modern technology

My husband has Alzheimer's and he now wears something … it's got all the information. It looks a bit like a watch but it isn't, and all the information is in there. Of course it does mean that somebody would have to know what they are looking for … Well his name, his address, most importantly my telephone number [information in the watch], because I am going to be surgically removed from that, that sort of thing. -W

Types of Technology Used: **Apps**

- Only participants in Wales highlighted the use of mobile phone apps

You also have an app on here called WheelMate, so that if you actually needed a full blown disability toilet, you press WheelMate, and it plots where you are and it tells you where your nearest one is. -W

I got so many and you will have so many apps on, you know, which is ridiculous. But you won't necessarily need those all. -W

It's so scary for people who haven't got apps. It's like there are too many almost. -W

Reasons To Use Technology: **Intergenerational**

- Canadians highlighted technology as the reason to keep in contact with children/grandchildren

I stay in contact with the grandchildren very much through email, mostly email and we share pictures. The grandkids will put something on Facebook, a real nice picture or something they are doing or that and then I will save that, put that into my pictures, into my album. And this way I get a lot of pictures so I follow in that way but yes, we are in… -McB

It's mostly my granddaughter that I'm texting to so I use that. I have used the microphone for WhatsApp and it comes in handy if you don't have your glasses and you can't see. -R

Reasons To Use Technology: **Intergenerational Benefits**

- Children/Grandchildren encouraged technology use

I think the younger gen, my grandchildren push me and they go, "Oh nana, you're so far behind, you should be up to date and you should be doing this and doing that." So they want me to be up to date with all the latest technology and I'm not. -R

I've got a tablet I was to take away with me because my grandchildren said it would be so useful to have and then I wouldn't be using theirs whenever I'm away on holiday with them. –MK

- Participants enjoyed video games with grandchildren

Jumping up and down to the things that they've got on the screen when you play tennis or jump up and down and dance, or whatever you're chasing, something. Yes. Video games, I suppose. Childish ones. The simpler, the better. -McB

Reasons To Use Technology: **Skype**

- Recognize benefits of Skype to connect with family

I go on Facebook and I go on Skype with my daughter in Australia and I do research things. Last night I was talking to my grandson, who's seven. I was telling him about the exciting things that I'd done in my life, like I've been dog sledding. I Googled dog sledding and this picture of a dog sled, so he understood what I'd done, and skiing and all these things. It's really nice to be able to access information now, because, "Grandma, how deep is the deepest part of the ocean?" "When we get home I'll look it up." -MK

Skype is brilliant. I've got a daughter in Spain, I've got a granddaughter in Spain, I've got a son in the West Indies and a daughter in London, and Skype is one of the most brilliant things that's happened because you can see, you can talk. MK

Mitigating the Digital Divide

- Important role of children

If I need to know something I will get my daughter to look it up on her, whatever thing she packs in her pocket. -McB

I ask my grandchildren, "Okay, how do I do this?" They say, "Don't you know?" But they will help me eventually. I don't know what I would do without my technological things. I would be rather lonely. -R

My daughter told me, "Mum, you seem to be struggling with this, aren't you." That was because I was trying to get that scanner to work and she was trying to guide me because she has the very same printer. As she went offline and I got it. I just scanned and I got it on there but I had to run it again. -R

Barriers to Accessing Technology

- In rural areas, connecting to the internet remains challenging

We had dialup forever also and that is enough to turn you off with them, isn't it? -McB

For the longest time I was on dialup and doing these daily emails until about a year and a half ago I could finally get a connection through the new cell tower they put in two years ago. -McB

- Can not keep up with technology upgrades

Sometimes I find if I go to computer classes especially if it is a young instructor and mostly young people there, that they go way too fast for me. I can't keep up, there is too much new information. And the other problem, it was mentioned before, was the language like computer and technological language is totally different from what we were raised with. And so there are words that I don't understand and I need someone to explain them to me -McB

Challenges to Technology Use: **Language Barriers**

- Participants felt challenged by technology language

They think I'm an idiot because I have grey hair and I don't really have the terminology to use to ask the questions. I really get frustrated when I go someplace to want to find out information. That's why I go to Google. I ask Google because they can't see. –R

What is a hard drive? I mean I don't even know what that is. -McB

Didn't know what the term 'wearable technology' meant -R

Didn't know what the term 'life logging' meant -McB

- Language changes too quickly

I used to use well the computer that we have there when I could find the information of a technical nature on it. Since they have upgraded I didn't keep up with the upgrades so I said, "To heck with it.". –McB

Challenges to Using Technology: **Barriers**

Other barriers raised included:

- Age related challenges
  - Visual Impairments
  - Physical fine motor skills-typing
- Programs they liked became outdated
- Speed of internet access
  - Major problem highlighted by rural dwelling participants in Canada
- Costs for internet access
  - Wales and Milton Keynes sites both mentioned this in passing but not in detail
  - Major problem highlighted by rural participants in Canada
- Lack of places to buy new technology
  - Also lack of formal tech support
  - In rural areas, no local electronics store

Challenges To Technology Use:
Frustration and Fear

- Participants across all sites noted feelings of frustration, fear, and lack of confidence

The tablet I find very frustrating because there are things you can't do on it that you can do on a computer. For instance, I used to go to my email. I click on somebody's name and start a conversation rather than emails. You can't do that on the tablet. –MK

I never cease to be amazed at what it can do. I love it, but get very, frustrated when it doesn't work and when nothing happens. –MK

There will be lots of people that think, "Oh my God, I can't do it." And also are scared –W

I think it's the fear, just the fear of doing it. You can see the use of it, but she's got that barrier for whatever it is. –MK

You get all the scare stories. You hear the bad things don't you. You know, when suddenly somebody – all your information has been hacked into or something, you know. -W

Loneliness and the Postman

- Feelings of loneliness, depression, and social isolation were common across groups
- UK participants
  - Highlighted the postman
  - Provided creative solutions using technology to address social isolation

My husband died a few years back and we've no children. But I used to have to leave a note on the door. "Pete…" That was our postman, "Please knock." And Pete would come in and he would open that jar or that bleach bottle. –W

If you had all this technology of someone on an intercom going through to your room. "Good morning Mrs. Smith, how are you today?" "I'm fine thank you." That might be the only contact they get -W

Assumption By Companies That Everyone is Online

I think a lot of organizations immediately assume that older people have access to the internet. I work with people in their 80s and 90s and they don't. -MK

Three years ago my mother-in-law got a letter. Mum was 91 at the time, my mother-in-law was 91. The letter read: "It is time for your flu jab. Please sign onto the attached website to book your appointment." I took it down to the health centre and said, "We've got a little problem there: Mum is not online," and they went, "We hadn't thought about that." -MK

Resistance to Using Technology

I don't want to be tied to technology like that, I just don't. -McB

I think as well, it comes up time and time again through the network, the amount of people who are actually still scared of computers. And you mention the internet and you can hear some of them taking a deep breath, about even using the internet for very basic things. –W

People are very wary. –W

It was just, I am wary of some technology which sometimes might be, with the best will in the world, misused. –W

I'm a Luddite. I do not like mobile phones. I think they say, "The social network, the social this, the social that." I think mobile phones are an expletive, antisocial, because no matter where you go you've got people doing this, doing this. -MK

Resistance to FaceBook

- Urban participants commonly expressed distrust and dislike specifically for FaceBook

I don't use Facebook. I've got a Facebook account, but I don't use it, because too much privacy and my wife has got thousands of friends who tell them that "Yes, I've had a cup of tea. I've eaten my sandwich."The whole world lives like that. I've got some examples I can talk about later. -MK

Facebook I went onto for a short period, but, like a complete wally, I didn't realize that unless you set up the privacy settings properly, everything you say is broadcast to the world. I fell out with my daughter quite badly over something. -MK

Discussion

- Despite challenges, participants embraced technology in their lives
- They were also planning or foresaw using technology as they aged.

Implications

- Provide age appropriate opportunities for technology education and training.
- Include accessible options/apps within educational programs.
- Creation of online support targeted at older adults who may use different terminology and have different technology needs.
- Focus on strengths and opportunities provided by technology.
- Avoid assumptions about use of technology amongst older adults.

Thank you very much

Contact Information:

Dr. Shannon Freeman, PhD
School of Nursing, University of Northern British Columbia
E-mail: shannon.freeman@unbc.ca