The Silver Surfer: Trends of Internet Usage in the Over 65 and the Potential Health Benefits

Abstract:

K Edwards, RM Duffy, BD Kelly
Department of Psychiatry, Mater Misericordiae University Hospital, Eccles St, Dublin 7

The Internet provides medical information and interventions with promising benefits. This cross-sectional study explored patterns of Internet use in the over-65s in Ireland from 2002 to 2010 by the European Social Survey (ESS) in order to identify potential health benefits. Data were analysed on 1606 Irish individuals. Internet use in Ireland is increasing at similar rates to the rest of Europe; the percentage of over-65s using the Internet in Ireland has continually increased. Since the advent of the Internet in the mid-1990s, its availability and range of uses have grown enormously. Nearly 80% of Europeans have access to the Internet. While the Internet has been used to provide healthcare information since its creation, the quality of this information has long been debated and many of the pros and cons of web-based information have been discussed. Parents use the Internet to gain medical information about their children's conditions and people seek information cooperatively when seeking a diagnosis. The diagnostic skills of the Internet are somewhat lacking. Recently, the Internet has been used for healthcare interventions. Many studies have looked at online peer-based support groups and, while these studies have had mixed results, it is an area with great potential that warrants further study. Self-guided programmes delivered via the Internet aim to promote awareness and knowledge about medical issues enabling positive change. These interventions are effective in the self-management of chronic illnesses. It is best demonstrated in diabetes, and chronic pain but there is emerging evidence for online interventions in cardiovascular disease including smoking cessation. The interventions aid in the practical aspects of illness via chat-rooms and forums. In addition to directed interventions there is preliminary evidence that Internet and e-mail use, in and of themselves, may improve cognitive functioning in the elderly.

Web-based interventions have shown promising results in mental health, specifically depression, anxiety, and substance misuse. Internet Cognitive Behavioural Therapy (ICBT) has comparable efficacy to face-to-face treatment. Web-based interventions are a useful adjunct to clinician-delivered treatment, as well as an initial treatment for those reluctant to seek help. The studies represent only the tip of the iceberg. There has been a large interest in this area in recent times and much research is being conducted. The benefit of Internet therapies is that information can be delivered in a way that is appealing to patients, such as using audio-visual cues, interesting graphics and, perhaps most importantly, 24-hour access. Another key advantage is cost-effectiveness, as they require minimal expenditure after development; a particularly appealing idea in the current economic climate. In the elderly population, the Internet has the potential to improve mental health. The increased rates of chronic illness, healthcare interventions and medication management expose older people to many risk factors for depression and anxiety. Long-term Internet in the elderly can prevent loneliness and self-management interventions are a viable option for those who have trouble seeking face-to-face healthcare (e.g., those with poor mobility or limited access to transport). Moreover, substance misuse and mental health problems in the elderly have been shown to be successfully treated via the Internet. This study will look at the trends in Internet use in the elderly over the last 12 years in Europe and, in particular, in Ireland.

Introduction

Methods

A cross sectional study was used to address the research question. Data from the European Social Survey (ESS) were analysed. The ESS is an academically driven biennial cross-sectional survey that has conducted surveys between 2002 and 2012. The study target population is Europeans age 15 and older. Data were collected through an hour long face-to-face interview. In this study the primary outcome was Internet usage, recorded as a binary variable (yes/no). The data were stratified by age, gender, marital status, level of education, physical health and whether the respondent lived in an urban or rural area. Living with a partner was chosen ahead of marital status as the data set was more complete and it was coded as a binary variable. Educational status was divided into those with less than lower secondary education completed and those with lower secondary education completed. Individuals who described their domicile as being either a farm or home in countryside or country village were rural dwellers and those who reported themselves to be living in a town or small city, suburbs or outskirts of big city or in a big city were classified as urban dwellers. In terms of physical health, those who reported their subjective health as good or very good were classified as having good health while people who reported fair, poor or very poor health were classified as fair to poor. Subjective well-being was a measure of life satisfaction and happiness. Happiness and life satisfaction were ranked on a Likert scale ranging from 0 to 10. Higher scores corresponded to higher levels of subjective well-being. The response to both these questions were added together to provide a measure of subjective well-being. As a result, the range for subjective well being was from 0 to 20.

Binary logistic regression was used to assess the association between the year the data was collected and whether people had access to the Internet or not. Analysis was also stratified by potentially confounders. This study primarily focused on those over 65 living in Ireland but, where it was relevant, comparisons were made to other countries in Europe. All data were weighted according to the ESS guidelines. Data were analysed using IBM SPSS statistics version 20.

Results

Data were analysed on 43,120 individuals over 65 across Europe. Our analysis focused especially on 1606 Irish individuals. The characteristics of the Irish and European population are presented in Table 1. Internet usage in all ages increased more or less uniformly across the 2002 to 2010 period but it was much lower in Ireland than many other countries in Europe. The lag behind some European countries (Table 2). Older people in the Netherlands, Denmark, Sweden and Norway are more than twice as likely to have access to the Internet when compared to Irish people. Over the five ESS rounds, Internet usage in Ireland has continually increased. Overall, comparing 2002 to 2010, there was a 290% rise in Internet use. We found that on average there was a 41% rise every two years in the proportion using the Internet (p<0.000, 95%CI 28 to 55). After controlling for age, gender, subjective health, whether a person lives with a partner or not, educational history and area of residence there was a 63.0% (95% confidence intervals 44.5 to 83.6, p<0.001) increase in Internet access every two years. This is comparable with the change in radio listening and newspaper reading which have actually decreased since 2002.

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Irish females were less likely to have access to the Internet compared to their male counterparts OR 0.69 (95% CI 0.53 to 0.90). While Irish females are less likely to have access to the Internet, their Internet access is growing at nearly twice the rate of their male counterparts. Males on average see a 28.7% (95% confidence interval 13.6% to 45.6%, p<0.001) rise, while females have seen a 61.2% (95% confidence interval 37.8 to 88.7%, p<0.001) increase during each two year period.

Age
While those aged over 74 are much less likely to have access to the Internet, again, this group is seeing a more rapid increase. In the 65-74 year olds there was a 38.4% (95% confidence interval 24.4% to 54.0%, p<0.001) increase in those with Internet access in each two year period, however, there was a much larger increase in those over 74 of 66.4% (95% confidence interval 28.4% to 66.6%, p<0.001)

Living Alone
Table 3 shows those who live alone are less likely to have access to the Internet but this population has a faster rate of increase in online access (62.2 compared to 46.0% every two years)

Geographical Location
The increase in access of the Internet has occurred at a similar rate in urban and rural settings.

Subjective Wellbeing and Subjective Health
Internet access has increased at similar rates between those with good and poor subjective health. Analysis was done on the Irish population to see if there were higher rates of subjective wellbeing in those with Internet usage compared to those without and, whilst there was a small increase in subjective wellbeing in those with access to the Internet, no statistically significant difference was found (p=0.178).

Discussion
This study highlights the potential of Internet-based interventions to improve healthcare in the elderly. We demonstrated how Internet use amongst over-65's both in Ireland and the EU is increasing; nearly trebling over the ten year period. Online interventions have many benefits for older people as they may overcome impaired mobility, social isolation and limited access to transport. Existing online interventions should be tailored to older people and new services should be developed. Such interventions could include appointment reminders, medication reminders, medical education and ICBT. The ESS data did not allow analysis of how older people use the Internet. This is a significant limitation of the study as we cannot establish that the Internet is being used as source of health related information for older people. Future research on what older people use the Internet for and levels of online literacy would be helpful. In comparison with reading the newspaper, listening to the radio and watching TV, this study shows that Internet access is the most rapidly growing medium for conveying information in those over 65. Internet access is becoming an important factor in healthcare and has a similar level of importance as literacy. As such, it is a key component of any social history and physicians should routinely enquire about it.

This study identified populations less likely to have access to the Internet, namely - those over 74, females, rural dwellers, those living alone, those with poor health and those who spent less time in formal education. Those living alone may be at particular risk. These populations may be more socially isolated and may benefit the most from access to the Internet. Where possible, linking these individuals with classes on how to use the Internet could improve quality of life and have health benefits. We would support the establishment of Internet courses for elderly people and further study into the potential of Internet access and online-based interventions in older people.

Correspondence: KA Edwards
Diabetes Day Centre, AMNCH, Tallaght, Dublin 24
Email: K.A.Edwards@hotmail.com

References

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