Senior Citizens, Digital Information Seeking and Use of Social Media for Healthy Lifestyle

Ágústa Pálsdóttir(✉)

Faculty of Social and Human Sciences, University of Iceland,
Gimli v/Sæmundargötu, 101 Reykjavík, Iceland
agustap@hi.is

Abstract. The study investigated how Icelanders who are 60 years and older seek and communicate about digital health and lifestyle information of health and lifestyle information. Random samples were used and participants categorized into two groups, 60 to 67 years old and 68 years or older. The development of information seeking on the Internet in the years 2002, 2007 and 2012 was examined, as well as the use of social media in 2012. Data analysis was performed with ANOVA (one-way). The study revealed that the pattern of seeking and communicating about information was very similar for the age groups. The frequency for information seeking on the Internet was low for both groups, although it had increased since 2002. Results about social media revealed that both age groups chose to receive information rather than share it or communicate with others. The results further revealed that the frequency of using social media was low for both groups. The findings of the study indicate that senior citizens have not yet adapted to the digitalization of health and lifestyle information.

Keywords: Health information · Information seeking · Internet · Senior citizens · Social media

1 Introduction

The growing proportion of older people in the world's population is an established trend. The progress is expected to continue in the coming years, from 2013 to 2050 it is predicted that the number of people aged 60 years and older will more than double [1]. This poses challenges for the nations that need to prepare for the increasing number of senior citizens and ensure their quality of life. It involves promoting their possibilities to manage their everyday life affairs, as well as their prospects to participate in society and continue to contribute to it.

An important factor at enhancing the wellbeing and independence of older people is to encourage them to be actively involved in health promotional interventions, through life-long learning. To be able to obtain the necessary knowledge about healthy lifestyles people need to have an easy access to adequate information that satisfy their needs and can be obtained in a way that suit them.

The increasing digitalization of health related information provides opportunities for an easy access to it. Although it is well known that elderly citizens have adopted

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information technology at a slower rate than those who are younger [2, 3], it has been suggested that, because those who are younger are more accustomed to using the internet in their work or private life, older people will gradually become more active users of the internet [4, 5].

Online access is a prerequisite for accessing information on the internet but other aspects should also be considered. Various factors have been identified that may have an impact on senior citizens use of information technology and act as barriers. This includes for example weak physical condition and health problems which can cause challenges for a certain group of elderly people [2]. Communication barriers, such as problems with the visual and auditory presentation of information [6], and changes in the motor ability which people can experience as they grow older [7], have also been recognized and can affect the ability to use digital devices. The group of seniors who is affected by this is probably in the greatest need for health related information. Therefore, it is every reason to focus on their abilities and make an effort to enable them to access the information. By taking the needs of elderly people into account when information technology is designed, for example with suitable interface design and touch screen solutions [8], some of the obstacles that they are faced with might be minimised.

Other essential matter which may have a bearing on the use of digital information is attitudinal issues. This includes for example aspects such as the perceived reliability of the information [9], or mistrust in it [10], as well as beliefs about the benefit of the information [9, 11]. In fact, if senior citizens consider the relevance of digital information to be high they are prone to make more effort at seeking it [5]. Attention has also been drawn to how important it is that senior citizens are health literate [12]. More recently, the significance of media and information literacy, or the ability to "…access, retrieve, understand, evaluate and use, create, as well as share information and media content in all formats…" has been recognized [13].

Social media (e.g. Facebook, Twitter, Wikipedia, and YouTube) has become increasingly important in peoples everyday lives and in the past few years and the use of it among senior citizens has been growing considerably [14–16]. Social media has proved to be influential in improving access to health related information [17, 18]. Contrary to traditional internet sources, such as webpages, newspapers or journals on the web, social media is characterized by a dialog where a number of people can communicate, exchange information and get feedback from each other [19]. It offers the possibility for groups, either broad and diverse groups consisting of strangers or more narrow and intimate, to connect and discuss shared health interests. Thus, by providing opinions and advice through social media, people may have impact on the health behaviour of others [20], as well as offer emotional support [21–23]. In addition, health specialists have the opportunity to employ it to disseminate quality information about healthy lifestyles.

The aim of the study is to investigate how Icelanders 60 years and older have adopted to the digitalization of health information. The paper will seek answers to the following research questions:

1. How has the frequency of digital information seeking about health and lifestyle developed, among Icelanders who are 60 years and older, in the period 2002, 2007 and 2012?
2. Do Icelanders who are 60 to 67 years old seek digital information about health and lifestyle more frequently than those who are 68 years and older?

It has been implied that senior citizens problems at using information technology will disappear, as those who are younger move up the age scale. Although the age limits for retirement varies widely across countries, it has been traditional in western countries to use the retirement age to define senior citizens [24]. Therefore it was decided to compare people at the age 60 to 67 years old, a group who is approaching retirement, with those who are 68 years or older, who in Iceland are defined by law as elderly [25]. The paper will present findings about how the health and lifestyle information seeking of these two age groups, in various sources on the internet, has developed in the years 2002, 2007 and 2012. In addition, results from the year 2012, about how they use social media in relation to health and lifestyle information, will be presented.

2 Methods

2.1 Data Collection

Data were gathered as postal surveys in 2002 and 2007. For both data sets random samples consisting of 1,000 people aged 18 to 80, from the whole country, was used. The response rate was 51 percent in 2002 and 47 percent in 2007. In 2012 data was gathered using an internet and a telephone survey from two random samples of 600 people each, aged 18 years and older from the whole country (oldest respondent was 92). The datasets were merged allowing answers from all individuals belonging to each set of data. Total response rate was 58 percent.

The current study involves participants in the age groups 60 to 67 years old and 68 years or older. The number of participants in each group is presented in Table 1.

Table 1. Number of participants by age group, in 2002, 2007 and 2012

Participants	2002	2007	2012
60–67	32	55	90
68+	44	61	90
Total	76	116	180

2.2 Measurements and Data Analysis

3. Socio-demographic information included traditional background variables. In the current analysis the variable age is used and participants 60 years and older were divided into two groups, those who are aged 60 to 67 years and those who are 68 years and older.

4. Information seeking on the internet was measured by asking 'Have you sought information about health and lifestyle in any of the following sources'? A five-point response scale was used (5: Very often – 1: Never). A list of over 20 information sources was presented but in this paper the focus is on sources on the internet. This includes five items: Discussion groups or news groups; Magazines or newspapers; Websites by the health authorities; Websites by others; Advertisements. Over the years, the questionnaire used in the surveys has developed in line with advances in technology and includes more digital sources in 2012 than in 2002. However, for comparison reasons it is important to use the same sets of measurements for the data from 2002, 2007 and 2012. Factor analysis (Principal Component) was used to produce scales from the list of all sources presented at the question. The criteria for factor loadings were set above 0.4, and oblique rotation (Oblimin) was adopted. Multiple criteria, based on eigenvalue >1.00 and a scree test suggested the extraction of three scales. The scales were checked for internal reliability and Cronbach's alpha for the Internet scale was 0.88 in 2002, 0.87 in 2007 and 0.90 in 2012.
5. Social media use was measured by asking 'Have you used social media (e.g. Facebook, Twitter, Wikipedia, YouTube, blog, etc.) in the following ways'? Subsequently seven questions about different ways to use social media in relation to health and lifestyle information were asked. This included for example questions about if the participants had provided information about health and lifestyle to social media, if they had received information from others, as well as commenting, forwarding or "liking" information in social media. A five-point response scale was used (5: Very often – 1: Never). It was decided to use factor analysis (Principal Component) to extract latent factors on the seven questions. The criteria for factor loadings were set above 0.4 and oblique rotation (Oblimin) was adopted. Multiple criteria, based on eigenvalue >1.00 and a scree test suggested that extracting one factor would be adequate. The factor which was named Social media explained 72 % of the total variance in the data. The scale was checked for internal reliability and Cronbach's alpha was 0.93.

ANOVA (one-way) was performed to examine difference across the age groups for the frequency of information seeking on the internet, as well as for each of the seven questions about the use of social media. To analyse the relationship between the age groups and the variable Social media, chi-squared and ANOVA (one-way) was used.

3 Results

The chapter starts by presenting results about how health and lifestyle information seeking on the Internet, by participants in the two age groups, has developed in the period 2002, 2007 and 2012. This will be followed by results about the relationship between the two age groups and the variable Social media. Finally, results about the participants various ways of using social media for information seeking and communicating about health and lifestyle, will be introduced.

3.1 Seeking Information About Health and Lifestyle on the Internet

Results about how the use of the internet for seeking information about health and lifestyle has developed in the period 2002, 2007 and 2012, on the scale 1 to 5, are presented in Fig. 1.

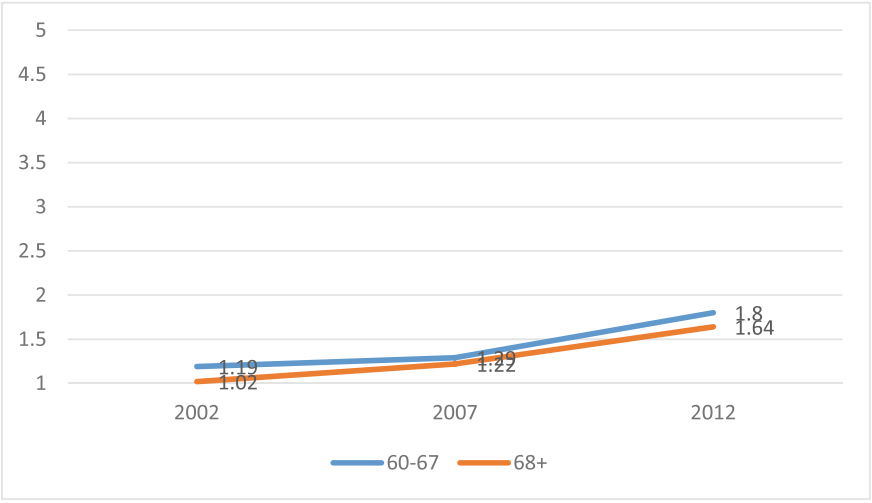

Fig. 1. Information seeking on the internet. Development in the period 2002, 2007 and 2012 (Color figure online)

Figure 1 shows that, both participants who are at the age 60 to 67 years old and those who are 68 years or older, sought information about health and lifestyle on the internet infrequently in 2012. Nevertheless, in the period 2002, 2007 and 2012, the frequency for information seeking on the internet increased for both age groups. This happened mainly between 2007 and 2012. Although the younger age group sought information slightly more often than the older group, the difference across the age groups is very small. Nevertheless, the results show that there was a significant difference across the age groups in 2002 ($p = 0{,}05$). In 2007 ($F(1, 110) = 5{,}82$; $p = 0{,}447$) and in 2012 ($F(1, 180) = 1{,}74$; $p = 0{,}189$), however, no significant difference was revealed.

3.2 Social Media

In recent years, social media has increased the opportunities for people to access health related information. For comparison reasons, the analysis of information seeking on the Internet did not include the use of social media, which was examined separately.

Results about the relationship between the variables age and Social media (factor analysis) are presented in Tables 2 and 3.

Table 2. Use of social media for health and lifestyle information. Participants 60 years and older

	Have used social media	Never used social media
60 years and older	49,6 %	50,4 %

Chi-square analysis revealed that about half of those who are 60 years and older have used social media to seek information and communicate with others in relation to information about health and lifestyle (see Table 2).

Table 3 presents results about how often participants in the two age groups used Social media, on the scale 1 to 5.

Table 3. Frequency of using social media for seeking information about health and lifestyle

	60–67 years old	68 years and older
Frequency of using social media	1,56	1,37

The results in Table 3 revealed that those who are 60 to 67 years old seek information slightly more often more often than those who are 68 years and older. However, the difference across the age groups is very small and proved not to be significant ($F(1, 167) = 3{,}13$; $p = 0{,}079$).

To further explore how people make use of social media, a number of questions were asked about the different ways to employ it in relation to information about health and lifestyle. The results are presented in Fig. 2.

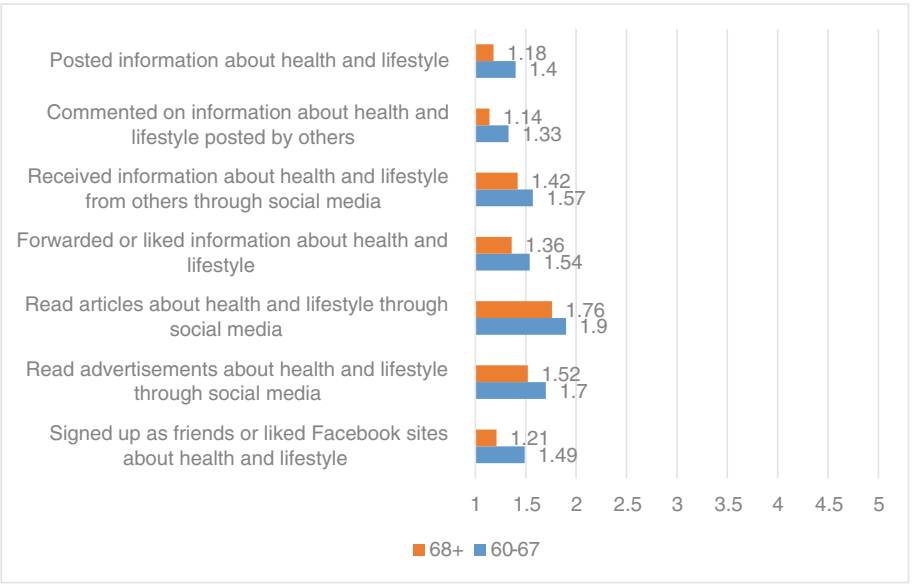

Fig. 2. Frequency of using different action of social media by age groups (Color figure online)

As can be seen in Fig. 2, the frequency for using the different actions is low for both age groups. Nevertheless, a comparison of the various functions that can be employed, shows that the groups choose to use some of them more often than others. The most favoured action by both of the age groups is to use social media to read articles about health and lifestyle. After that, both groups preferred to read advertisements about this topic. The functions that were employed least often, by both age groups, were making comments on information that others had posted, post information themselves and sign up as friends or like sites on health and lifestyle on Facebook.

A significant difference was found for two of the questions. Those who belong to the younger age group posted information more often than those are in the older age group ($p = 0{,}05$). Likewise, the younger age group signed more often up as friends, or liked Facebook sites, than those in the older age group ($p = 0{,}05$).

4 Discussion

The study investigated how Icelanders who are 60 years and older seek and communicate about digital health and lifestyle information. Senior citizens form the fastest growing group of citizens in western societies, as in many other parts of the world [1]. Concerns have been raised that, due to the complexity of using information technology for health communication, senior citizens may not benefit as much from digital health information as others [26]. By comparing results about two age groups, people who are 60 to 67 years old and those who are 68 years and older, the study gives evidence about how their digital information seeking in has developed in the years 2002, 2007 and 2012. Furthermore, the use of social media in the year 2012 was explored.

The internet has become an increasingly important channel of health related information [27] but it is contingent on people having online access. In the past years the prevalence of Icelanders with internet access has increased steadily. A total of 78 % of the population had online access in 2002 [28], the figure had gone up to 84 % in 2007 [29] and 95 % had internet access in 2012 [14]. Although figures for senior citizens are not available, these statistics indicate that their prospects for accessing the internet are good. The availability of online information may also be of consequence, and it is fair to assume the amount of it has increased since 2002. Information that used to appear only in print was often also available in digitalised form already in 2007, for example newspapers or magazines offering websites. Furthermore, the amount of information on websites of health authorities and public health institutes has grown steadily in the period 2002 to 2012, with brochures, articles and news about research findings, being published in both print and digital form. Hence, the possibilities that senior citizens have to access digital information have improved.

In the past few years, the use of social media among senior citizens has been growing [14–16]. Social media has the potential of supporting and influencing information behaviour in several ways. About half of the participants who were 60 years and older were found to have used social media in relation to health and lifestyle information. The results further revealed that the frequency was low for both age groups. However, there was some variation in how often the different actions that social media offers were employed. Both age groups, chose to receive information rather than

share it or communicate with others. Using social media to open links and read articles, and after that advertisements, were the most favoured actions. Through this health professionals may have an opportunity to disseminate quality information and advocate healthy living for senior citizens. Functions such as posting information, commenting on what others have posted, or signing up as friends or liking Facebook sites about health and lifestyle, where least preferred. Furthermore, the only significant difference across the age groups was for posting information and signing up or liking Facebook sites, which the younger group employed more often than the older group. Thus, the study demonstrates that although the frequency of use was slightly higher for those who are 60 to 67 years old than those who are 68 years and older, the use of social media was very similar for the groups.

An examination of information seeking on the internet revealed that it has increased since 2002. Despite of this, digital information were still sought infrequently in 2012, a finding which is further supported by the result about the low use of social media. A comparison of the age groups shows that, although the younger group sought digital information and used social media for health communication slightly more often than the older group, the difference across them was very small and not statistically significant. Thus, those who are at the age 60 to 67 use information technology for health and lifestyle information in a similar way as those who are 68 years or older.

This is interesting in the light of the idea that has been so persistent [4, 5], that the problems which senior citizens deal with at using information technology will gradually dissolve, and as a result they will become more active users of digital information. The findings of the study indicate that changes in using information technology for seeking and communicating about health related information, by senior citizens, may happen at a slower rate than anticipated.

The study is limited by a response rate of 51 percent in 2002, 47 percent in 2007 and 58 percent in 2012. Although this may be considered satisfactory in a survey it raises the question whether or not those who answered the survey are giving a biased picture of those who did not respond. Nevertheless, the findings provide valuable information about the development in digital information seeking since 2002.

Information about healthy lifestyles is increasingly being disseminated digitally. It is important to realize that people may not always change their information seeking behaviour in line with the new opportunities that technology offers. Particularly senior citizens who have formed their habits during a lifetime. Senior citizens did not grow up with computers or the internet, and not all of them have had an opportunity to grow accustomed to using it while they were still active on the labour market. In addition, information technology develops rapidly, so even though it can be assumed that the coming generation of senior citizens will be more used to seeking information digitally, the skills that they possess today may be irrelevant in the future. The society has a duty to ensure all senior citizens access to information in a way that suits their needs and capabilities. A question remains whether senior citizens will be able to adapt and learn how to use new technology. Or, if they should be ensured an access to information through the means that they themselves prefer.

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