PREPARING SENIORS FOR E-HEALTH: A STUDY ON THE READINESS OF THEIR TECHNOLOGY TUTORS

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PREPARING SENIORS FOR E-HEALTH: A STUDY ON THE READINESS OF THEIR TECHNOLOGY TUTORS

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Abstract

Creating an inclusive healthy society in the digital era requires older adults to develop e-health literacy. Older adult learning capabilities and styles are known to fluctuate with their physical and cognitive abilities. Programs to develop e-health literacy have yet to be sustained in the ongoing format required by older adult learners. This study is part of a larger project aimed at developing a delivery model for sustainable e-health literacy programs for older adults. This model is based on sustained digital literacy programs that address the digital divide faced by older adults. It explores the assumption that digital literacy tutors are willing and able to deliver e-health literacy programs in the same way they currently deliver digital literacy programs. It does this by focusing on the current cohort of tutors who perform a pivotal role in sustaining digital literacy programs. The current level of e-health literacy of this cohort of tutors and their attitudes and perceptions on training adult learners in e-health literacy was collected using an online survey. The findings indicate that although digital literacy program tutors are enthusiastic about e-health and coaching seniors to develop e-health literacy, their levels of e-health literacy are not sufficient for the task. The findings have important implications for research and practice in the area of e-health literacy and senior participation in e-health.

Keywords: e-health literacy, consumer health information seeking, older adults, computer training, digital divide
1 INTRODUCTION

The Internet can help improve consumer health literacy through greater access to health information and services (Fox 2006). However, to achieve any impact on their health, seniors aged 60+ years of age will require skills to seek, find, understand and appraise health information from electronic sources and apply that knowledge to address health problems (Norman & Skinner, 2006b). These combined skills and their competencies are referred to in this paper as e-health literacy (eHL).

Analysis of the ages of 2.6 million citizens (11% of Australia’s population) registered to use the Australian national e-health infrastructure project (DoH, 2016) revealed a low participation rate by senior (13%) compared to other age brackets (23%-40%). This highlights a need to identify methods to improve eHL participation among seniors. Low levels of digital literacy (DL) (ABS, 2014) and health literacy (ACSQHC, 2014) required to develop eHL in Australian’s aging population demonstrates a need to study eHL in aging populations for how it may contribute to improved population health.

A range of effective eHL interventions focused on seniors, have been trialled in libraries and healthcare (Watkins & Xie, 2014b; Xie & Bugg, 2009). This supports a move to sustained eHL interventions for seniors. Training in how to seek, find, understand and evaluate general information is offered to seniors within sustained DL programs such as the Australian Broadband for Seniors program (BFS, 2016). With a broader understanding of the synergies and overlap in skills between eHL with DL, complemented with a group of eHL and DL competent tutors, ongoing senior DL interventions could be expanded to develop senior eHL. Yet there is limited knowledge about these synergies, in particular, the readiness of tutors in providing training to seniors.

Focusing on the important potential role DL tutors could have in developing senior eHL, this research-in-progress paper aims to investigate: (1) the current tutor cohort’s ability to teach eHL to seniors; (2) tutors perspectives on how to develop senior eHL and; (3) the scale of effort required to up-skill tutor eHL levels.

The research question addressed in this paper is: How prepared are Australian digital literacy tutors to introduce e-health to seniors? Both qualitative and quantitative approaches were used to gain understanding of tutor readiness to be involved in eHL.

This paper begins by exploring the challenges and opportunities DL tutors will confront to get the prerequisite eHL training competencies. The research methodology follows on from these and other influences motivating consumers to participate in e-health. The research findings are presented and their implications are discussed. The paper concludes by presenting some avenues for future research to build on the findings of this work.

2 E-HEALTH LITERACY AMONG SENIORS: OPPORTUNITIES AND CHALLENGES

A range of barriers prevents seniors from accessing health information services. These include language/cultural differences, sensitivity and emotional issues, age related issues and physical difficulties. While technology could help reduce these barriers, seniors must first need to have proficiency in the collection of literacies known as e-health literacy (eHL). eHL includes a combination of overlapping skills including involving competencies and intelligences around using digital technologies and health literacies (Aviram & Eshet-Alkalai, 2006; Belshaw, 2012; Erstad, 2010; Norman & Skinner, 2006b). Studies have revealed that seniors have health and age related barriers that affect their learning journeys using the internet (Xie & Bugg, 2009). They have difficulty in translating the meanings of icons, reading and adjusting the font size and colour contrast of information displayed and discriminating between unlabelled advertisements and site content (Watkins & Xie, 2014a). They also have patterns of online interaction and health information seeking
behaviours that reflect their mistrust of health information on the internet and varying ability to deal with large volumes of information (Manafò & Wong, 2013a; Manafò & Wong, 2013b).

In a number of countries there have been programs offered as part of the senior digital literacy training that include eHL skills. The Australian Broadband for Seniors (BFS) program and GoDigi are examples (BFS, 2016; GoDigi, 2016). These programs provides free internet access in locations frequented by seniors along with training sessions, one on one assistance and a helpline. The programs cover some training on improving the digital literacy skillset including general online information searching, safety on the web (personal security and privacy hygiene) and digital communications (email, skype and social media). They also focus on guiding health information seeking in addition to digital literacy skills such as guidance on how to identify the quality of health information and provide links to quality health resources. Some studies suggest that using systematic search techniques to address the challenges of finding quality health information could help seniors overcome risks associated with online information seeking behaviours (Campbell, 2005; Fink & Beck, 2015; Manafò & Wong, 2013a). However, these types of on-going online eHL intervention require seniors to first have some digital skills to find them. This highlights the conundrum of how to attract seniors to commence digital literacy when they have no understanding of what digital literacy can be used for and therefore little motivation.

Using e-health to provide seniors with meaningful experiences could be one way to sustain senior interest in computers in order to developing proficient levels of digital literacy and eHL. However, research is yet to provide evidence of a direct link between eHL and digital literacy. To date, research has focused more on the links between eHL and health outcomes. Historically, the level of evidence for eHL impacting health outcomes has not been strong. Reviews on online interventions for enhancing consumer health literacy found there was insufficient satisfactory evidence linking eHL interventions to health outcomes (Car et al., 2011). More recently though, a similar review on the effectiveness of eHL claimed that online health information tools could show promise in facilitating immediate, intermediate, and long-term outcomes in older patients by providing information, enhancing information exchange, and promoting self-management (Bolle et al., 2015). Studies suggest that seniors could be motivated by the benefits of eHL skills linked to the benefits arising from information exchange, self-efficacy, health knowledge, attitudes and behavioural intentions (Bolle et al., 2015; Fink & Beck, 2015).

Seniors need eHL interventions at the right time, in the right place, in the right format for their age and convenience. These interventions will require well-trained tutors that are prepared to encourage and support senior eHL. As e-health continues to evolve alongside changes to the internet and increasing numbers of seniors seek digital skills, tutors must be prepared with eHL insights, skills and tools to offer seniors. Current literature provides senior digital literacy tutors with a range of benefits for developing eHL, a range of eHL tools and approaches to overcoming some of the barriers seniors encounter when they start to develop eHL (Feufel, 2014; Manafò & Wong, 2013a). To improve senior’s attitude to eHL, tutors should be aware of the techniques (searching for validating information, using a variety of search terms to narrow results), tools (eSearch guidelines) and effective approaches (starting searches at a health-related website) in eHL interventions. The extent to which digital literacy tutors are already addressing senior eHL needs is not known. Searches for evidence of consumer eHL interventions that are readily available to the digitally illiterate Australian senior were unsuccessful, indicating there is a role for tutors in on-going senior digital literacy programs to fill the gap and become eHL advocates and coaches (Cline & Haynes, 2001; Fox, 2006). This research-in-progress focuses on the readiness of tutors in playing an effective role to train and support seniors on eHL skills.

3 RESEARCH METHODOLOGY

This research investigates the development of senior e-health literacy (eHL), specifically from the viewpoint of senior digital literacy tutors tasked with introducing seniors to eHL. It is anticipated
that senior literacy tutors are representative of their senior student population in age. Therefore, studying this group of Australian seniors provides two perspectives on the level of Australian senior eHL simultaneously, that of the digitally literate senior and the senior tutor.

The focus for tutor recruitment was the tutors associated with Broadband for Seniors (BFS) and its subsidiary organisations: Adult Learning Australia, University of the Third Age Online, Australian Senior Computer Clubs Association. BFS is a government funded community development program that aims to increase the skills and confidence of senior Australians to use computers and the Internet. The BFS program provides free Internet access at kiosks and facilitates volunteer tutor assistance at locations where seniors gather, such as senior citizens’ centres and residential retirement facilities.

In the study, DL tutors were surveyed online to determine how prepared they were for teaching eHL. This included asking them to rate their eHL skills and explored their attitude and perspectives on their potential role of instructing seniors in eHL. BFS volunteer tutors meet and discuss online using the, BFS volunteer, google group. 270 tutors are registered members of this group. We were interested in inviting participation from tutors from all states and regions of Australia. A survey invitation to participate and survey distribution was performed electronically. This invitation to participate was posted as a new discussion topic in the tutor’s online discussion forum. Further, we emailed the invitation to organisations delivering digital literacy interventions to seniors. These organisations were identified through recommendations and online searches. All invitations contained an embedded live link to the online google form survey that collected responses automatically. 111 digital literacy tutors submitted responses online.

The survey had four parts: a scaled assessment of e-health skills; a scaled attitude to e-health; tutor and instruction demographics and an opportunity to qualitative attitude to teaching e-health to seniors. The first three parts were mandatory. The eHEALS scale developed by Norman and Skinner (2006a) contributed the first two parts. Tutors that were competent to teach eHL were expected to respond with agree (4) or strongly agree (5) to all questions.

Tutor’s attitude to e-health and level of eHL was analysed using distribution analysis. The tutor’s perception of their e-health skills established their level of eHL. Content analysis on their comments revealed four themes tutor wished to explore relating to e-health: 1) the characteristics of e-health, 2) the risks they associated with senior eHL, 3) the role of health professionals in e-health and 4) the need for eHL intervention resources. The overall findings were used to answer the research question: How prepared are Australian tutor to introduce e-health to seniors in digital literacy programs?

4 FINDINGS AND DISCUSSION

This section reports the survey findings and discussion on the research question - How prepared are Australian tutors to introduce e-health to seniors in digital literacy programs? Section 4.1 reports the results of tutors’ e-health literacy ratings (eHEALS scores) and establishes the average tutor cohort’s level of e-health literacy (eHL). The influence of tutor demographics on eHL levels is also presented and discussed. Section 4.2 then presents findings from the analysis of tutor’s attitudes and perspectives on teaching e-health to seniors.

4.1 Digital literacy tutor self-perception of their e-health skills

The average and standard deviation of the tutors’ ratings for each of the seven eHEALS statements is represented in Figure 1. The average of all tutors’ eHEALS ratings was 3.59. The tutors’ average ratings of their eHEALS statements ranged from unsure (score of 3) and agree (score of 4) (n=111, avg=3.59±0.89). Tutors did not rate their eHEALS statements between agree (score of 4) and strongly agree (score of 5), the range reflecting eHL competency.

This average tutor eHEALS rating of 3.59 was found to be equivalent to the findings from a prior study that investigated a group (n = 67) of seniors (60-65 years) and assessed them prior to an eHL
intervention (Manafò & Wong 2013b). This comparison supports the finding that Australian senior DL tutors have limited confidence in their eHL skills.

Figure 1. Average of Australian Digital Literacy tutor eHEALS ratings

Further analyses of average tutor eHEALS ratings revealed what tutor’s perceived as their eHL strengths and weaknesses. 80% of tutors reported their strongest area of e-health capability was their ability to find helpful health resources on the Internet. Tutors recorded their lowest average eHEALS rating to question 7 showing a low confidence in using information from the internet to make health decisions.

Lower average rating for familiarity and discernment of high quality e-health resource indicates that training for tutors focused on the range of quality e-health resources available would have the greatest impact on senior health.

Furthermore, analysis of the average eHEALS ratings of tutors at various locations and age brackets shows that tutors with the highest eHL were from two tutor groups; the 30-39 year old tutors and those assisting in a domestic setting (Figure 2).
Tutors provided instruction at four main locations: libraries (n=22), individual’s homes (n=14), and computer classrooms and computer clubrooms (n=32) and Broadband for Senior (BFS) kiosks (n=38) BFS kiosks are distributed around Australia wherever free Internet access and assistance can be provided to seniors. These locations include veterans and legacy clubs, ethnic clubs, community information houses, aged care services offices, residential settings such as hostels and rooming houses, bowls clubs and museums.

### 4.2 Digital literacy tutor e-health attitudes and perspectives

70% of tutor’s attitudes to e-health were positive. This was indicated in their responses to questions adapted from the eHEALS questionnaire: *How useful do you feel the Internet is in helping you in making decisions about your health?* and *How important is it for you to be able to access health resources on the Internet?* The tutors with negative attitudes felt stronger about the Internet’s unimportance over its uselessness.

Tutors also expressed mainly positive attitudes to teaching e-health based on the responses to the question: *How do you think older Australians should be taught consumer online health information seeking skills?* Tutor’s responses are shown here in italics. 62% of all tutors expressed support for structured or informal eHL intervention. 14% were unsure or expressed mixed opinion such as: “*It could be helpful but a qualified medical consultant should be used to give this advice*”. 8% qualified their negative attitude to e-health interventions for seniors with comments such as “*I don't think it is a skill that seniors really need*”. This group either disagreed totally, or emphasised the need for health professionals to provide the instruction in statements such as: “*No. Their best port of call is their local GP*”.

Based on their responses, tutors’ attitudes to e-health and eHL intervention are explored in the following sections. Each section represents one of the major themes identified: 1) the characteristics of e-health, 2) the risks associated with senior eHL, 3) the role of health professionals in e-health 4) the need for eHL intervention resources.

#### 4.2.1 Characteristics of e-health

Tutors clearly identified access to quality health information as e-health’s strength. Many tutors focused on online general health research of diet and fitness advice: “*websites that assist with diet and exercise (physical and mental), looking up information with regard to diet for health purposes*”.

In addition, tutors identified range of technology features and tools suitable for exploring e-health such as web 2.0 providing senior friendly “*health apps*” and “*interactive health information websites*” and “*health databases*”. Some mentioned the benefits of the centralised “*personal e-health information*” that can be “*accessed securely via personal e-health records*” and the ability to access health information available in “*layman’s language*”.

Tutors suggested a variety of roles for e-health. They identified “*health decision-making and triggers for discussion*” as uses for e-health. Many ways e-health can be used with “*personal health*” were discussed. This included the ability to engage with healthcare services, “*book medical appointments, visit Medicare sites, check on medication, check side effects and monitor their progress by receiving feedback over the net*”. Further, tutors talked of e-health assisting with making health decisions and enhancing their experiences towards better health. They identified the ability to search online for resources post-diagnosis to “*find out who specialises in the treatment, find Carer Support programs*”, and use health consumer websites to read “*user reviews and forums entries that help evaluate online information and to contribute to online forums*”. Tutors also identified how e-health can support their relationship with their GP by providing information that supported them in “*discussions with their GP*”. 

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*Figure 2: Average of Australian Digital Literacy tutor eHEALS ratings by location and age range*
4.2.2 Risks associated with e-health literacy

Tutors identified their role in seniors eHL interventions would include helping them to avoid risk. 26% of tutors commented on the risks in some way such as “Doctor Google can almost make you have any disease, online health information is not always correct”. Some identified general solutions such as “providing a list of key health resource sites to senior” while 32% mentioned health provider involvement.

Tutors that were surveyed drew on their experience in teaching seniors. They commented on risks arising from their student’s approach to online information. They talked about their student’s inability to determine the context of the information which in the e-health context could leading to poor self-diagnosis, inability to find information in plain language, their student’s increased levels of anxiety arising from the erroneous information and inability to deal with conflicting information. Also tutors were concerned about their student’s lack of skills to discern between “fake, misleading or bad “information and “good, correct, appropriate, reliable or genuine” information.

Tutors, seeing the need for e-health, recommended seniors “seek professional medical care and advice in-person” in addition to any e-health activities. Many tutors called for doctors to deliver eHL interventions, “a health professional has the best resources of information”. However, seniors would still require eHL to search these websites and deal with the information located.

4.2.3 The role of health professionals in e-health

Tutors had a variety of perspectives about e-health changing the dynamic of the health decision-making relationship between patients and doctors. They were able to relate both the risks and benefits of seeking information online, as demonstrated in these two statements.

“I believe it is better to obtain health info from one’s GP. Looking up various things on the internet is useful, but any conclusions one comes to should be checked out with a professionally trained person”

“I believe that self-diagnosis can be extremely dangerous and quite frightening, and that seniors should be taught to use web resources with great caution and only in conjunction with clinical help from the health practitioner....”

Attitudes varied on the role of doctors in the flow of health information. The following statement from one tutor indicates an example of a clear position for not providing eHL instruction to seniors, “Their best port of call is their local GP. He has had the education via Uni and internship and the experience whereas the Internet can and does lead people astray”. While another tutor called on doctors to contribute to the development of the patient’s eHL, “I feel it would be helpful if local the doctor’s surgery and libraries were able and knowledgeable to give advice on how to use the internet for an initial search”.

4.2.4 Need for e-health literacy intervention resources

While the majority of tutors were comfortable with advising seniors on e-health techniques and tools only a couple mentioned authorised health websites. Some tutors identified the need for eHL intervention materials. They suggested a variety of stakeholders be such as “government, doctors, hospitals” produce these and a variety of deliver methods such as screen capture videos and course notes.

CONCLUSION

The role of digital literacy (DL) tutors in the development of e-health literacy (eHL) literacy among seniors is pivotal for building a healthy society in today’s digital age as populations aging grows as an economic concern. In particular, with the Australian government investing heavily in both a
national broadband network and e-health infrastructure, eHL will be required by all segments of the population if they are to benefit equally. This study focuses on the tutors of seniors over other age groups for two reasons. Firstly, training seniors requires tutors trained in learning styles unique to seniors. Secondly, data on seniors’ participation in Australian e-health and digital initiatives shows there is a greater need for senior tutors than other age brackets.

Currently, there is limited research investigating senior eHL development. In order to overcome this knowledge gap, and as part of a larger study into the development of eHL, this study conducted an online survey of senior DL tutors active in senior DL programs in Australia. The study examined how prepared Australian DL tutors were to introduce e-health to seniors in DL programs. The study collected tutor ratings of their eHL skills and tutor perceptions on e-health for seniors and senior eHL interventions. Furthermore, it reports findings on the attitude to e-health of a group of digitally literate Australians.

The findings from the survey revealed that senior DL tutors do not have sufficient eHL to tutor seniors in eHL, although these tutors were found to have a positive attitude to e-health. The findings identify a need for an eHL intervention for DL tutors that focus on the subset of the eHL skills that tutors rated themselves weakest in. Furthermore, DL tutors’ perceptions of e-health as unimportant may be a contributing factor in lower senior participation rates in e-health. The survey findings showed that a significant number of seniors place little importance on e-health and eHL. Further research could contribute to better understanding the triggers of and drivers of these perceptions, and the methods that could reverse these perceptions.

By exploring the preparedness of Australian DL tutors to introduce e-health to seniors, this study offers modest contribution to current understanding of the level of eHL among seniors and possible challenges and mechanisms for developing senior eHL. To further enhance the findings of this study, similar studies could be done in other countries. In addition, future studies are required to directly investigate the level of eHL among seniors, their perception of the importance of eHL and challenges encountered in developing eHL. Such studies would help identify effective interventions required to help seniors build their eHL.

References


