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Impact of computer training courses on reduction of loneliness of older people in Finland and Slovenia

Helena Blažun [a,b,*], Kaija Saranto [b], Sari Rissanen [b]

[a] University of Maribor, Faculty of Health Sciences, Žitna ulica 15, 2000 Maribor, Slovenia
[b] University of Eastern Finland, Faculty of Social Sciences and Business Studies, Department of Health and Social Management, P.O. Box 1627, FI-70211 Kuopio, Finland

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ABSTRACT

Previous research has shown loneliness as a threat for the quality of life of older people; therefore the goal of the intervention in a quasi-experimental study was to evaluate and discuss the self-reported level of loneliness of older people in Finland and Slovenia before and after a computer intervention. Intervention in a quasi-experimental study was conducted among 58 older participants at the baseline (M = 72.4 years) and 45 older participants at the follow-up research study (M = 72.9 years). Inferential statistics showed a significant difference in the reduction of loneliness between the countries, and a decreased level of loneliness of older people after completing the computer training course. Although older people experience many age-related problems which may reduce their interest in learning information and communication technology (ICT) skills, it is important that they are computer-proficient, because computer engagement can reduce the level of loneliness of older people and in this way has a positive effect on their quality of life.

1. Introduction

Intense research is focused on various aspects of older people and the possible implications for improving their quality of life and general well-being. The definitions of health and well-being vary and are often viewed from the perspective of society, which regards health and well-being as the actual state of physical health of the individual (e.g., physical symptomatology, epidemiological rates of physical illness and diseases) or, on the other hand, as mental, emotional or psychological aspects of an individual (e.g., as indicated by emotional states and epidemiological rates of mental illnesses and diseases) (Danna & Griffin, 1999). The positive or negative quality of life of older people depends partly on the individual's subjective internal emotional interpretation, and partly on the objective contingencies of their histories (Xavier, Ferraz, Marc, Escosteguy, & Moriguchi, 2003). Loneliness is part of the quality of life of older people; therefore it is also a subjective experience, connected to unfulfilled intimate and social needs (Peplau & Perlman, 1982).

Many older people might experience loneliness, mainly due to age-related problems, such as immobility, various diseases, bereavement, physical and mental decline and lower income (Fokkema & Knipscheer, 2007). A wide range of intervention approaches and programmes have been implemented to alleviate the loneliness of older people, and one possibility is an intervention using ICT. Sum, Mathews, Hughes, and Campbell (2008) showed in their study a negative correlation ($r = -0.0036$) between romantic loneliness and the hours spent on the Internet; meaning that respondents who spent more time on the Internet had a lower level of romantic loneliness. Additionally, social and family loneliness were higher ($r = 0.033$ and $r = 0.031$) among participants who spent more time on the Internet. After a 6-month web-based intervention, a randomized control trial among older people with diabetes showed a significant improvement ($p = 0.007$) on the participants' level of depression, quality of life, self-efficacy and social support compared to the control group (Bond, Burr, Wolf, & Feldt, 2010).

Carpenter and Buday (2007) found that older computer users reported fewer depressive symptoms and less loneliness ($p = 0.001$), which is also implied by a study by Shapira, Barak, and Gal (2007). However, the researchers did not find a statistically significant link between the intervention consisting of Internet use and a lower level of loneliness. Nevertheless, the study provides important insights into the possible effects of Internet engagement on older people.

Further evidence also implies gender differences in Internet and e-mail use: more men use ICT to stay in contact with other people compared to women (Koopman-Boyden & Reid, 2009). On the other hand, Vuori and Holmlund-Rytkonen (2005) did not find any correlations between Internet use and gender, but a study by Campbell (2004) showed that older women with an internal locus of control, a low level of anxiety toward computers and a high level

* Corresponding author at: University of Maribor, Faculty of Health Sciences, Žitna ulica 15, 2000 Maribor, Slovenia. Tel.: +386 23 004 750; fax: +386 23 004 747.
E-mail addresses: helena.blazun@uni-mb.si, helena.blazun@uef.fi (H. Blažun), kaija.saranto@uef.fi (K. Saranto), sari.rissanen@uef.fi (S. Rissanen).

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of self-efficacy will use the Internet more often than men for the purpose of finding medical information to manage their health problems.

Many of the above-mentioned studies focus on different aspects of the wellbeing and quality of life of older people, including research on the psychosocial and psychological effects of interactive computer and Internet use (Adams, Stubbs, & Woods, 2005; White et al., 2002) as well as the general impact of computer, Internet and e-mail use on the social and emotional wellbeing of older people (Koopman-Boyden & Reid, 2009; Slegers, van Boxtel, & Jolles, 2008), but only a few focus on the impact of computer and Internet engagement on the reduction of loneliness of older people. Nevertheless, even these studies do not show a significant relation between ICT use and the reduction of loneliness.

In contrast, the focus of the present research study is on the impact of a computer intervention on reducing the level of self-reported loneliness of older people. Bearing in mind some previously mentioned evidence implying a gender difference in ICT use, we were also interested in this particular factor in Finland and Slovenia, two countries where the lifestyles and living environments of older people are somewhat different.

Internet World Stats has published a web page ranking 58 countries with the highest Internet penetration rate, where Finland is listed on the 9th place with 83.5% and Slovenia on the 42nd place with 64.8% Internet penetration rate (Internet World Stats, 2011). According to the Finnish national statistical report, 43% of older people aged 65–74 years are Internet users (Statistics Finland, 2010); on the other hand, in Slovenia only 2.1% of older people aged 65–74 years are Internet users (Statistical Office of the Republic of Slovenia, 2011). From this fact it is evident that in both countries, the Internet penetration rate is at a fairly high level, though there is a considerable difference in the Internet use and attitude toward ICT of older people.

On the basis of the differences stated above we conducted the particular study with slightly different ICT interventions, based on the national contexts.

The strengths of the present study are: international comparability of the results from teaching ICT skills to older people and potential effect of computer engagement on reduction of loneliness, assessment of a large number of factors impacted by ICT use, relatively large sample of participants compared with similar studies. However, there are some limitations to the present study. In particular, due to the differences between the countries, it was difficult to compare the results, since the protocol of computer interaction was not identical. Limitation issues will be discussed in detail in Section 4.1 of this article.

Empirical work to date suggests that loneliness could be reduced with ICT interventions, but the studies have focused on different aspects of well-being of older people (e.g., physical, social, emotional, autonomy, etc.) (Slegers et al., 2008).

1.1. Aims of the present study

The overall aim of the present study was first, to evaluate and compare the level of older people's current ICT knowledge and experiences in Finland and Slovenia by a baseline study, and second, to analyze in a follow-up study how an ICT learning intervention supported the development of their ICT skills and how it affected their behavior regarding social interaction. Additionally, we explored the extent to which, after a computer intervention, older people were able to exploit ICT to improve their social inclusion, and consequently reduce their loneliness.

The theoretical construct assumption is that there is a nonparametric dependency between the independent variable "ICT intervention" and the dependent composite variable "loneliness". In this study, loneliness is observed through the following variables: computer and Internet use, number of existing friends, possibilities of making new friendships through on-line communication forms (e-mail, Skype), frequency of Internet use, and frequency of sending e-mails. These variables were selected on the basis of the literature review (Bond et al., 2010; Fokkema & Knipscheer, 2007; Koopman-Boyden & Reid, 2009). It is postulated that ICT intervention reduces loneliness.

Therefore, we posed the following research questions:

1. How many older people possess a computer and have routine access to the Internet and to what extent they had the opportunity to gain experience in using ICT?
2. How do older people self-report on the level of loneliness before and after a computer intervention in Finland and Slovenia?
3. How do older people self-report on the level of loneliness after a computer intervention in relation to gender, place of residence (town or country) and according to their living arrangements (living alone or with spouses/friends/children)?
4. How and to what extent do various on-line forms of communication impact on the social inclusion and level of loneliness of older people?

2. Methods

2.1. Participants

The number of participants in the baseline study was 58 older people and that in the follow-up study 45 older people from Finland and Slovenia. In Finland, the participants were recruited by the Kuopio Community College via an Internet page (http://kansalaisopisto.kuopio.fi/fi/etusivu/), newspapers, and TV and radio announcements. In Slovenia, the participants were recruited within the European project entitled "Promoting the improvement of elderly ICT skills and well-being by inter-generational and multisectoral education" (acronym PRIMER-ICT) via flyers, the project's web page (http://www.primer-ict.eu/), brochures, media and demonstrational workshops.

Due to the different organizational settings of the ICT training courses, the older people in Finland were more self-motivated, and thus no special sampling type or selection criteria were used for the older people registered for the ICT course. In Slovenia, on the other hand, the participants were selected by care givers among interested residents according to their health status; here the computer training courses were promoted through demonstrational workshops organized to reach as many participants as possible. In the workshops, the older people were informed about the aims of the project, the possibilities of learning about advanced technology, the benefits offered by technology and the possibilities of participating in training courses. An additional purpose for organizing the workshops was to introduce the facilitators to older people and vice versa, so that they would feel comfortable working together and thus achieve better learning outcomes (Blažun, Saranto, & Vošner, submitted for publication).

In Slovenia, training courses were organized in two elderly homes in Maribor ('Danica Vogrinec Maribor' and 'Sunny home') and were financed by the European Union. In Finland, the older people applied spontaneously to the services provided by the Kuopio Community College, which included computer training courses and were partly financed by the Finnish government and the City of Kuopio and partly by the older people's own financial contributions.

Notwithstanding the differences in setting and the fact that older people in Slovenia live in elderly homes, both groups of older people were in good health both physically and mentally.

All participants were involved by their own decision, as long as they had little or no ICT knowledge, were healthy, able to read,