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THE ELDERLY AND A REMOTE HOME CARE: THE CASE OF SLOVENIA

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Due to increasing ageing, western countries are facing an increase in financial needs to provide suitable healthcare, social care and housing for the elderly. One of society's responses to these issues is the idea of moving elder-care activities to their living environments. This can be achieved with the help of information and communication technologies (ICT) by which home care could be provided remotely. However, the findings of various authors suggest that elderly people have mostly negative attitudes towards a remote home care. In order to determine the views of the elderly towards this service in Slovenia, a survey was conducted, the results of which are discussed in this article. Contrary to our cassumption, it turned out that elderly people have positive attitudes towards remote home care. This was attributed to effectively informing respondents and increasing their understanding of the operation and usability of the service. Raising the awareness of potential users is therefore crucial for its acceptance in a society.

Key words: the elderly, attitudes, ageing at home, information and communication technologies (ICT), telecare

Introduction

The process of ageing and the related problems of ensuring sustainable health, social and residential care of the elderly are posing increasing challenges to developed countries, including Slovenia. New strategies for taking care of the ageing population are therefore increasingly oriented towards moving care activities to the home environment and thus enabling elderly people to stay at home longer, which also matches their preferences. They wish to stay home in the same familiar living and social environment as long as they can. Moving elder-care activities to homes demands that effective service provision and service quality should be adapted to the living environment as well as the implementation of new organisational procedures and technological solutions. The development of the information society makes this possible with the use of ICT, which can provide remote home care or telecare. This is a system that remotely connects the homes of

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the elderly with the control centre and, via this centre, with healthcare centres and other care facilities. A survey was conducted in order to establish what the elderly in Slovenia think about remote home care using ICT; its results are discussed in this paper. Based on the findings of various researchers, the basic hypothesis was that the majority of the elderly have a negative attitude towards ICT and telecare.

Theoretical premises

The first, simple versions of remote control systems were used as early as the 1980s and the early 1990s. These were safety-alarm systems, technically simple devices based on a telephone connection. A special telephone set is installed at the user of the service and it is equipped with a wireless remote trigger that the person carries with him like a bracelet on his arm or a locket around his neck. This supervisory and communications platform enables the user to request assistance at any time from anywhere in his home by merely pressing the wireless trigger; he can call a relative, neighbour, acquaintance or the coordination and information centre, and talk to the operator concerning assistance (Doughty, Cameron, Garner, 1996; Miskelly, 2001).

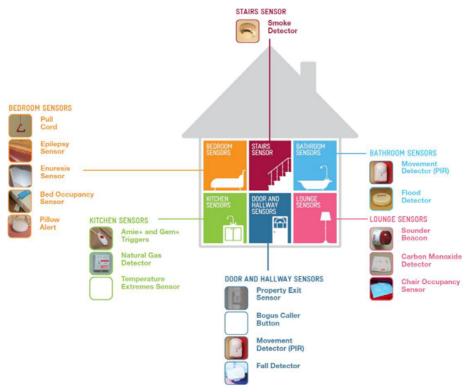
With the ICT improvements at the end of the 1990s, more advanced forms of telecare systems were introduced in the developed countries that use applied forms of ambient intelligence or a smart environment (Remagnino & Shapio, 2007; Pecora & Cesta, 2007). The users' home environments are connected into a network of remote supervision and through this network they are connected with caretakers and other service providers. This telecare system functions using sensors that are discretely built into the user's home smart environment (e.g., on door handles, other handles, watches, etc.) and monitor the following: (1) sudden changes in the room (e.g., falling, epileptic seizures, etc.), (2) the user's life cycle (they measure/detect his physiological functions such as heartbeat, blood pressure, skin moisture, blood sugar levels, body weight, body temperature, carbon dioxide levels in exhaled air. murmurs in the body, etc.) and (3) psychological functions (slow and permanent lifestyle changes); they evaluate the behavioural pattern of the person monitored (e.g., based of the number of times a person walks through a door, how often they open the refrigerator, the frequency of stepping onto the rug in front of their bed, frequency of bed use, etc.). The devices also issue warnings to the user - these warnings are automatic reminders (e.g., the electronic pill dispenser warns the user that it is time to take their medication, etc.). All the information is transmitted and recorded by means of a remote information (control) system. In addition to these devices that monitor the user's condition, devices that determine any unusual conditions or unusual circumstances in the living environment are also built into the

smart environment. These include a fire, smoke or gas detector, a water leakage detector, a movement detector and so on. If the system detects any changes that might deviate from the user's normal parameters, an alarm automatically goes off and is forwarded to the call (alarm) centre (to the remote caretaker). This centre appropriately responds in the user's home environment (Rudel & Premik, 2000). For this reason, this type of a telecare system is defined by Barlow et al. (2006) as response mode or r-mode. By its nature, the telecommunications alarm centre may be an information and coordination centre and assumes the role of a mediator between the users and assistance providers (as is the case with the safety-alarm system). It may perform the role of a combined mediator carrying out information and coordination as well as implementation activities, and may also include assistance providers in its work; for example, home nursing, social workers, emergency medical care, fire fighters, relatives or neighbours and so on. Depending on the type and scope of the problem(s), the person in charge at the call centre provides suitable instructions (or recommendations) to the user (e.g., to take medication, see a doctor, etc.) or informs the public service or service providers about the user's needs (Rudel, 2007). The operation of the call centre is also supported by a medical team that occasionally remotely accesses the data gathered in the information database of the clinic. Recognising various biophysical patterns offers relevant information during the early stages of discovering the deterioration of an individual's medical condition or can contribute to a more suitable adjustment of the recovery programme or to relieving a potential chronic condition. It enables not only automation of the routines but also better and more informative insight into the patients' condition and understanding of their needs. Users of a telecare service that wish to monitor the results of their efforts relating to their health may access their aggregate data at any time equipped with suitable recommendations or advice via ICT. This way, they may actively and effectively participate in the process of ensuring health, care and remote security (Jelenc, 2007). This form of telecare is defined by Barlow et al. (2006) as preventative mode or p-mode (some other authors do not define this form as telecare but as telehealth – they understand telecare only as the responsive aspect of such a system). Recently experts have developed even more innovative forms of telecare that focus on the quality of the user's life rather than on his independence and safety and enable users to take part in the wider social environment via virtual media and the Internet. They are called virtual neighbourhoods because their users can perform services and socialise with other people without having to leave their homes, which prevents him from feeling lonely and isolated (Brownsell, Blackburn, Hawley, 2008; Brownsell et al., 2011).

In Slovenia, the first most basic form of safety-alarm system was established in Ljubljana in 1992. The service was called *Rdeči gumb* (Red Button) or *Halo pomoč!* (Hello, Help!), but professionals refer to it as the Lifeline Program. It was carried out in the municipalities of Jesenice and Medvode and the cities of Ljubljana and Kranj. In the following twenty years, the service also began to be provided by other remote care centres such as those in Maribor, Celje, Koper and Nova Gorica; for a while, the service was also available in Slovenj Gradec (Smolej, Nagode, Jakob Krejan, 2010). They covered the areas of urban municipalities and their surroundings. However, from October 2011 onwards the service has been available throughout Slovenia. It is called *SOS-gumb* (SOS Button) and can be accessed via a mobile phone or landline.

Figure 1.

Advanced forms of telecare systems include various sensors built into the home environment of an elderly person



Source: Chester & District Housing Trust, 2011.

Given the rapid ICT development and trends elsewhere across the globe, where advanced forms of telecare systems have been introduced in great

numbers in recent years (e.g., in the UK, U.S. and Japan), it can be expected that these kinds of innovations will also be introduced in Slovenia. However, any successful implementation of an innovation in a specific social environment demands that the capabilities offered by the new technology match the needs, demands and capabilities of users (Kerbler, 2012). According to Rogers (1962) and a series of other researchers (e.g., Smixmith & Smixmith, 2000; Levy et al., 2003; Demiris et al., 2004; Hanson & Percival, 2006), the disregard for the needs and demands of users in makes innovations unaccepted society in implementation. Specifically, users are not interested in the technological aspects of innovations, but primarily in their applicability. Therefore, the service or the "service experience" is what they are interested in rather than the devices and systems per se. Thus the main question is what users like and what "works" for them (Saranummi et al., 2006). This is especially important with regard to innovative telecare systems that are based on more advanced ICT forms and are intended for the elderly. As shown by various studies (e.g., Hanson, 2001; Marquié, Jourdan-Boddaert, Huet, 2002; Richardson et al., 2005; Lee & Phippen, 2006; Richardson, 2006), elderly people are generally very suspicious of ICT as it is. For example, Tetley et al. (2001) report that a general belief that most often makes the elderly uncomfortable is that living in an intelligent environment is too automated; in addition, they often think that technology replaces personal forms of care, protection and communication, which could result in reduced social interactions and isolation or, as Wyde and Valins (1996) point out, in creating societies of "high-tech hermits". According to Sponselee et al. (2008), this means that the elderly are "technophobic": they are afraid of innovations and new technologies. According to Pečjak (1998), this originates in the problems connected with using technologies, and Czaja et al. (2006) believe that this also has to do with a lack of self-confidence and doubts in their own abilities due to sensory and cognitive deficiencies. Cheverst et al. (2003) justify all of this with the fact that the elderly are more conservative and do not want their lives and habits to change too much, especially not due to external, lessfamiliar factors that can disturb their privacy. According to Fisk (2003) and Percival and Hanson (2006), the elderly are afraid of losing their privacy, especially when it comes to telecare, because they have the feeling they are constantly being watched (the big brother syndrome); this is also indicated by studies conducted by Redford and Whitten (1997), Glueckauf and Ketterson (2004) and Berther et al. (2007).

The author believes that a good knowledge of various opinions and perceptions of advanced telecare forms among the elderly could contribute to more successful implementation of this service in Slovenia in the future.

This is even more important if one considers that the implementation of the safety-alarm system has not been very successful in Slovenia. In 2010, nearly 20 years since its first introduction, only 343 individuals used this service in Slovenia (Smolej, Nagode, Jakob Krejan, 2010) or 0.1% of people older than 65, in which their number even decreased (there were 363 in 2008).

Methods

The research results presented in this article are part of a more extensive study of the living habits, desires and needs of the Slovenian elderly conducted in the first half of 2012. The data were collected using face-toface interviews, and the sample included 116 people 55 years or older; the voungest was 55 years old and the oldest was 89. Because it was presumed that the majority of the respondents were unfamiliar with the remote home care system, in which the users' home environment is organised following the smart home concept, the system was explained to them in a simple and comprehensive way before the interviews. They system's operation was presented to all the respondents in the same way: five short scenarios had been prepared in advance to demonstrate how the system works in everyday situations, how it can be used and what the role of its users is in relation to home environment technologies. After the presentation, the respondents had quite a few questions, and the administrators tried to provide the most realistic answers possible; if anything was unclear during the interviews, they could also ask additional questions. The respondents were most interested in whether all the things described were even possible and if the system truly exists rather than being something that could only be possible in the future. During the presentation and while providing answers to various questions, it turned out that the interviewer had to really know the research area well, had to be good at providing clear explanations and had to have a strong sense of empathy. Because the interviewer in this survey was adequately qualified and had all the required skills and expertise, the respondents were able to obtain all the necessary information through the described methods of presenting innovative forms of telecare to objectively express their opinions by providing answers to the following questions:

"If this type of service were available in your home...

- would you feel safer and more independent, and less worried about your health, general condition and the idea that no one would help you if something happened to you in your home?
- could you stay at home longer and go to an institutional care facility later or even not at all?

- would you feel that someone was constantly watching you and would you feel uncomfortable because this would disturb your privacy?
- would your relatives and friends visit you less often and you would be more lonely?"

The answers were graded for analysis purposes: every respondent that expressed a positive opinion about the telecare system was given one point, whereas no points were given to those that had negative opinions. The total number of points for an individual respondent ranged from 0 to 4 (0 meant that all the answers expressed a negative opinion, and 4 meant that all the answers expressed a positive opinion). Regardless of the answers (positive or negative opinions), the respondents were also asked whether they wanted to have this type of service at home. Because it turned out that there were considerable differences in the answers according to the respondents' ages, in the analysis some results were presented and compared by individual age group.

Results

The survey results showed that elderly people have a positive attitude towards telecare, which contradicted the author's assumption. Altogether, 78.4% of respondents replied that they would like to have this type of service at home even though they do not view it entirely positively. The majority of these respondents (85.7%) were "younger", that is 55 to 64 years old. The share decreases with age, but it is nonetheless relatively high (table 1).

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Age group in years (number of respondents)	Desire for telecare (share of respondents)		
	Yes	No	
55–64 (<i>n</i> = 35)	85.7	14.3	
65-74 (n = 42)	78.6	21.4	
Over 74 $(n = 39)$	71.8	28.2	
Total	78.4	21.6	

Table 1. **Desire for telecare among the elderly**

However, further analysis revealed that elderly people still have certain second thoughts regarding remote home care. More than half (55.2%) had at least one negative opinion. The fewest among these came from the younger age group (37.1%), and the majority came from the oldest age group (71.8%; see table 2).

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Age group in years	Number of negative/positive opinions (share of respondents)	
(number of respondents)	At least one negative opinion	Only positive opinions
55–64 (<i>n</i> = 35)	37.1	62.9
65-74 (n = 42)	54.7	45.2
Over 74 $(n = 39)$	71.8	28.2
Total	55.2	44.8

 $\label{eq:Table 2.} Table \ 2.$ Negative opinions of the elderly regarding the remote home care system

However, negative opinions regarding certain telecare features do not mean that people also oppose its implementation. It turned out that only those that did not have any positive opinions or that mostly had negative opinions about telecare would reject it. Those whose opinions were at least 50% positive almost completely supported the introduction of a telecare system at their homes (table 3).

Table 3. Support for introducing telecare by opinions of the elderly

Desire for	Number of negative/positive opinions (share of respondents)				
telecare service	0	1	2	3	4
Yes	0.0	0.0	84.2	95.8	100.0
No	100.0	100.0	15.8	4.2	0.0

Note: 0 = only negative opinions, 1 = one positive and three negative opinions, 2 = two positive and two negative opinions, 3 = three positive and one negative opinion, 4 = only positive opinions.

The elderly mostly doubted the fact that they could stay longer at their homes and thus go to an institution at a later date. Half of them were not sure that the telecare system could really make that possible. Some of them expressed their thoughts about this during the interviews:

As long as I can walk I can manage, but when I can't walk anymore, I'll have to go to a retirement home. Nobody will be able to take care of me at home, even if I have all this "equipment".

(male, 74)

My neighbour had a stroke last year. Just like that. And she never had any problems before. What good would all this technology do her now? She's bedridden and her daughter does everything for her. She says they're going to put her in a home because it's just too much for her.

(female, 68)

I wish I could stay at home as long as possible. But I don't think I'll be able to. Even if I had everything set up like you say. When you start becoming senile, others have to take care of you because you don't even know what you're doing anymore. But as long as you're in your right mind you can still do practically everything and live normally.

(female, 78)

My mum lived alone in her house. And then she started feeling dizzy and fell several times. Once she was lying on the floor for half a day because she couldn't get up and I was at work. Well, it would've been good to have some kind of alarm go off at that point. But when this started happening more often we began to get really worried. Even if we'd had these devices in the house she wouldn't have been able to live by herself anymore. I took her to live with me at first, but then she got a place at a retirement home.

(female, 57)

A more detailed analysis showed that the share of those that believe telecare would not enable them to stay at home longer and go to an institution at a later date increases with age (table 4). The share of "younger" elderly people

Table 4.

Opinions of the elderly regarding extending their stay at home and postponed institutional care thanks to telecare

Age group in years (number of respondents)	Extending stay at home thanks to telecare (share of respondents)	
	Yes	No
55–64 (<i>n</i> = 35)	68.6	31.4
65-74 (n = 42)	54.8	45.2
Over 74 $(n = 39)$	28.2	71.8
Total	50.0	50.0

that think this way is 31.4%, whereas among people older than 74 this share increases to 71.8%. The reason for this could be the fact that elderly people

base their assumptions on the experience of their peers whose health condition suddenly deteriorated and were thus no longer able to live independently. Hence they conclude that something similar could happen to them. On the other hand, people in the younger age group most likely do not think about sudden changes in their health condition that often, but rather about gradual changes, and so they think this type of service could ultimately help reduce various risks and solve their health problems while staying at home.

In addition to reduced trust of the elderly in the opportunity to prolong their stay at home using telecare, more than a third of respondents (34.5%) are also afraid of losing their privacy. In this regard, there are no age differences among them. They generally believe that they would feel someone is constantly watching them:

So they're going to watch what I put in my mouth? They wouldn't be very happy with what they'd see. I know I shouldn't eat any fat at all, but it just feels so good once in a while. I just can't help myself.

(male, 71)

It wouldn't be nice at all to have someone constantly watch what you're doing. I get what you're trying to tell me: that it would be to my benefit, but I'd just have to get used to it.

(female, 60)

Then they'd know everything about me; when I use the bathroom, when I get up, what I eat and if I had a drink. Just like in some movie. You couldn't really live like that.

(male, 82)

I know you said they wouldn't record me with a camera like in those reality shows on TV. But it would still feel like that.

(female, 58)

Even fewer negative opinions (22.4%) were expressed regarding safety and the opportunity to live independently, which telecare enables. Only 11.7% believe that this service would not make their relatives and friends visit them less frequently. The number of those that are afraid that this service would make them lonelier is a bit larger among the older age group (table 5), which is understandable because older people in particular that have gradually lost their friends with whom they spent time in their home environment (either because they moved or died) often feel socially excluded. However, one

should note that there are small differences in the shares of answers between individual age groups.

Table 5.		
Views of the elderly on whether telecare would make them have fewer visits		
and make them lonely		

Age group in years (number of respondents)	Fewer visits and enhanced loneliness (share of respondents)	
	Yes	No
55–64 (<i>n</i> = 35)	5.7	94.3
65–74 (<i>n</i> = 42)	11.9	88.1
Over 74 $(n = 39)$	15.4	84.6
Total	11.2	88.8

Some respondents' opinions regarding safety and the opportunity to live independently and the potential social exclusion due to telecare are presented below:

If this is really how you explained it earlier, I'd be less afraid that something might happen to me. It's not that there's anything wrong with me, but you never know. All the things you hear about ...

(male, 67)

Oh, that would be so nice. I feel bad as it is because the young ones are so worried that something might happen to me when I'm alone.

(female, 84)

But then nobody would come see me anymore. Now at least the homecare nurse visits me, and my daughter comes to check up on me. If you had everything on your computer, nobody would ever come up into these hills again.

(male, 82)

Everyone still likes to visit me. Anyone that has some time to spare stops by. And we have a cup of coffee, we chat a little bit and time just flies by. I think no technology can ever replace human contact. If you like being around someone, you just are because you want to be with them.

(female, 59)

Discussion

In order to determine whether other researchers also arrived at similar findings, studies were analysed in which elderly people were asked about their views on telecare. The analysis showed that studies like these do exist. Three of them are presented here in greater detail. In the one conducted by Julienne Hanson et al. (2007) in the British towns of Barnsley, Plymouth and South Bucks, 64% of elderly people reported they wanted to have telecare service available in their homes; the highest share (81%) was attested in Barnsley. A full 98% of respondents believed that telecare would enable them to stay at home longer, and all of the respondents in Barnley and 96% of respondents in South Bucks would feel safer using this service. The British respondents had more second thoughts about the control because only half (51%) replied that did not bother them. Concerns about telecare invading their privacy were also shown in the U.S. survey conducted by Bertera et al. (2007). Nearly two-thirds of respondents would not allow their homes to be video-monitored. They widely supported all other services provided by telecare: more than 90% supported the transfer of information on the users' health condition to the control centre, the automatic alarm when needed and reminders to take medicine; more than 80% supported monitoring unusual changes indoors (e.g., detecting falls), monitoring the users' life cycle (measuring physiological functions) and their daily behaviour patterns, and the opportunity for telecare users to monitor their aggregate data online, while being provided with suitable recommendations and advice. Rahimpour et al. (2008) also report very positive views of elderly people on the telecare system in Australia. The majority of respondents included in the survey stated they would be prepared to accept this service because they found it useful. They believed it could help users lead a quality and independent life in their home environment (listing peace of mind and comfort), improve their access to health services, empower them to participate in managing their own health and reduce the ratio of admittance to institutional care facilities (prolong the users' stay at home). However, they stressed that the relationship between users and caretakers (i.e., medical staff, doctors and others) should not be based only on a virtual exchange of information, but that they should maintain personal contact (at least occasionally and in more important cases) through visits because this should have positive psychological effects on people's health and wellbeing.

The reason that this study also led to the same results (i.e., that elderly people generally have a positive opinion about telecare) is ascribed to the fact that the service was presented to the respondents in great detail and as comprehensively as possible before the interviews. In the studies described above, respondents were unfamiliar with telecare or had only heard about it,

but did not know what it meant, and so before they started collecting information the interviewers clearly described the service (e.g., in the British study they used scenarios and in the Australian they used a video presentation). Hence it can be concluded that giving appropriate information to potential telecare users and educating them as well as the subsequent understanding of how this service works and what it can be used for are key to this service being accepted by users; this, in turn, can significantly contribute to successful implementation in society. This is also confirmed by the results of the attempted implementation of advanced forms of ICT-based remote home care in Scotland. From 2007 to 2010, 25% of new users (compared to the initial state) there decided to integrate smart technologies into their home environment and integrate their homes into the remote control network and thus connect them with care and other service providers. Before that, the Scottish government had spent a lot of time and money on informing potential users about the importance and features of telecare (see Joint Improvement Team, 2010). In this it turned out that the user experience had an important effect on raising awareness and understanding, and the subsequent acceptance of this innovation. As reported by Beale et al. (2010), the data on user satisfaction, which were available in Scotland while giving out information, were obviously sufficiently informative to motivate a wide circle of addressees: 60.5% of users believed that their quality of life improved through the reorganisation of their homes into a smart environment and their inclusion in the remote care and protection system; 93.3% of users believed this made them safer, 69.7% thought they were more independent and 87.2% reported that other family members had less work with them. The Scottish case is also confirmed by the U.S. survey described above: the most positive views were expressed by respondents that had already had some experience with assisted technologies.

Even though the study focused on establishing how elderly people feel about ICT-based remote care, one needs to note that formal and informal caretakers also use this service. The statements of relatives reported by Beale et al. (2010) also confirm that these new technologies can also help caretakers: 74.3% of relatives felt less burdened thanks to their use. In the future it would thus make sense to also include relatives in this study because their views also have an important effect on how telecare is accepted, supported and used in society. However, in order to realistically evaluate it, the remote home care system should also be appropriately presented to them because, as the results of other studies show, the views of caretakers can also often be distorted due to various reasons. Perceptions connected with telecare that may be present among the caretakers include fear/resistance to the service and excessive excitement over it. They

primarily resist the service because ICT-assisted care of the elderly seems impersonal to them and also because, as Raappana et al. (2007) report, they are afraid they would have to (partially or fully) give up their role of caretakers, which formal caretakers in particular feel called to do. According to researchers, this fear often results from the fact that caretakers have insufficient knowledge of the use of these technologies and regard training as an additional, unnecessary and stressful obligation. Thus, if caretakers understood how these technologies work, got to know their advantages and benefits, and learned how to use them, the fear would be gone and they would therefore also accept them as part of their lives and work. In addition to resisting these technologies, caretakers can also be overly excited over them, which also prevents objective evaluation of telecare and keeps it from being successfully implemented. Raappani et al. (2007) report that these perceptions can most often be ascribed to informal caretakers (i.e., relatives). The modern rhythm and way of life increasingly limits the opportunities for family home care of elderly family members, which is why "it seems that in Slovenia and elsewhere in Europe in recent years the main provider of elder care to date (i.e., the family) has been failing to perform this role" (Ministry of Labour, Family and Social Affaires, 2007: 9). Therefore, family caretakers expect innovative ICT to replace or completely disburden them, which is a utopia and dangerous both to the elderly, who might actually become socially isolated, and to successful implementation of telecare because the disappointment following the realisation that ultimately technology cannot replace people might lead to resistance and spreading negative views of remote home care in society. Therefore, caretakers should be informed in detail what the actual capabilities of telecare are and have realistic expectations about it.

Conclusion

This study showed that elderly people mostly do not trust and accept ICT and ICT-based innovations such as telecare if they do not know them or understand how they work and what their effects are. The unsuccessful implementation of the safety-alarm system in Slovenia in the past twenty years has resulted not only from a non-uniform technological system, limited geographical coverage and price, but also from insufficient education of the public and the ineffective method of informing people about this service. In areas where this service was established and the price was not excessively high, the number of users was nonetheless low; however, as confirmed by the evaluation studies of the safety-alarm system (see Hojnik-Zupanc et al., 1996; Hlebec et al., 2002; Zajec 2006), users were very satisfied with the service. Hence it can be concluded that better and more effective

dissemination of information, especially if potential users have the opportunity to hear all of the positive opinions of those already using this service, would contribute to a better understanding of how this service works, decrease the negative opinions in general and controversial questions surrounding it and, of course, increase its use. Therefore, the new service SOS-gumb, which is supposed to eliminate the deficiencies that were established to be the main reason why the innovation failed (i.e., unify the technical system, the price and the geographical coverage of the service), will not receive the desired acceptance and popularity without effectively educating the potential users. However, this is a poor starting point for implementing more complex forms of ICT-based remote home care in the future. Nonetheless it should be noted that even positive views on telecare and its acceptance among users do not guarantee that it will be successfully introduced in society. A positive attitude of users is important for the idea to come through in society but, as Kerbler reports (2012), the entire process of implementing telecare involves a combination of technological and organisational planning and in addition to users also includes others stakeholders that have various perceptions regarding risks and various value systems that need to be satisfied.

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References

- BARLOW, J., S. BAYER, R. CURRY (2006). "Implementing Complex Innovations in Fluid Multi-Stakeholder Environments: Experiences of Telecare", *Technovation*, 26 (3), pp. 396–406.
- BEALE, S. et al. (2010). "The Initial Evaluation of the Scottish Telecare Development Program", *Journal of Technology in Human Services*, 28 (1–2), pp. 60–73.
- BERTERA, E. M. et al. (2007). "Attitudes towards Health Technologies for Telecare and Their Relationship to Successful Aging in a Community-Based Older Minority Population", Forum on Public Policy: A Journal of the Oxford Round Table (Oxford).
- BROWNSELL, S., S. BLACKBURN, M. HAWLEY (2008). "Evaluating the Impact of 2nd and 3rd Generation Telecare Services in Older People's Housing", *Journal of Telemedicine and Telecare*, 14 (1), pp. 8-12.
- BROWNSELL, S. et al. (2011). "A Systematic Review of Lifestyle Monitoring Technologies", *Journal of Telemedicine and Telecare*, 17 (4), pp. 185–189.

- Chester & District Housing Trust (2011). ChesterCare service. Chester.
- CHEVERST, K. et al. (2003). "Design with Care: Technology, Disability and The Home". In R. Harper (ed.) *Inside the Smart Home*.
- CZAJA, S. et al. (2006). "Factors Predicting the Use of Technology: Finding From the Center for Research and Education on Aging and Technology Enhancement (CREATE)", *Psychology and Aging*, 2 (2), pp. 333–352.
- DEMIRIS, G. et al. (2004). "Older Adults' Attitudes towards and Perceptions of 'Smart Home' Technologies: A Pilot Study", *Medical Informatics and the Internet in Medicine*, 29 (2), pp. 87–94.
- DOUGHTY K., CAMERON K., GARNER P. (1996). "Three Generations of Telecare of the Elderly", *Journal of Telemedicine and Telecare*, 2 (2), pp. 71–80.
- FISK, M. (2003). Social Alarms to Telecare: Older People's Services in Transition (Bristol).
- GLUECKAUF, R. L., T. U. KETTERSON (2004). "Telehealth Interventions for Individuals with Chronic Illness: Research Review and Implications for Practice", *Professional Psychology: Research and Practice*, 35(6), pp. 615–627.
- HANSON, V. L. (2001). Web Access for Elderly Citizens (Alcacer do Sal).
- HANSON, J., J. PERCIVAL (2006). Differing Perspectives on Telecare: An Attitudinal Survey of Older People, Professional Care Workers and Informal Carers (London).
- HANSON, J., et al. (2007). "Attitudes to Telecare among Older People, Professional Care Workers and Informal Carers: A Preventative Strategy or Crisis Management?", *Universal Access in the Information Society*, 6 (2), pp. 193–205.
- HLEBEC, V. et al. (2002). "Evalvacija 10-letne uporabe alarmnega sistema kot sredstva večje samostojnosti starostnikov", *Zdravstveno varstvo*, 41(3–6), pp. 153–159.
- HOJNIK-ZUPANC, I., N. LIČER, V. HLEBEC (1996). "Varovalno alarmni sistem kot socialna inovacija v slovenskem prostoru", *Zdravstveno varstvo*, 35 (9–10), pp. 289–294.
- JELENC, J. (ed.) (2007). "Strateški razvojni načrt Tehnološke platforme I-TECHMED: inovativne in podporne tehnologije v medicini 2007–2013", podnart.
- Joint Improvement Team (2010). An Assessment of the Development of Telecare in Scotland: 2006–2010 (Edinburgh).
- KERBLER, B. (2012). "Ageing at Home with the Help of Information and Communication Technologies/Staranje domá s pomočjo informacijsko komunikacijskih tehnologij", *Acta Geographica Slovenica*, 52 (1).
- LEE, S. Y, PHIPPEN, A. (2006). The State of Elderly in ICT Adoption at Rural Areas (Plymouth).
- LEVY, S., et al. (2003). "Perspectives on Telecare: The Client View", *Journal of Telemendicine and Telecare*, 9 (3), pp. 156–160.

- MARQUIÉ, J. C., L. JOURDAN-BODDAERT, N. HUET (2002). "Do Older Adults Underestimate Their Actual Computer Knowledge?", *Behaviour & Information Technology*, 21 (4), pp. 273–280.
- Mepacs Personal Alarm Service (2012). Connecting with you, 24 hours a day. Melrose Park.
- MINISTRY OF LABOUR, FAMILY AND SOCIAL AFFAIRES (2007). Strategija varstva starejših do leta 2010 solidarnost, sožitje in kakovostno staranje prebivalstva (Ljubljana).
- MISKELLY, F. G. (2001). "Assistive Technology in Elderly Care", *Age and Ageing*, 30 (6), pp. 455–458.
- PEČJAK, V. (1998). Psihologija tretjega življenjskega obdobja (Ljubljana).
- PECORA, F., A. CESTA (2007). "DCOP for Smart Homes: A Case Study", *Computational Intelligence*, 23 (4), pp. 395–419.
- PERCIVAL, J., J. HANSON (2006). "Big Brother or Brave New World? Telecare and Its Implications for Older People's Independence and Social Inclusion", *Critical Social Policy*, 26 (4), pp. 888–909.
- RAAPPANA, A., M., RAUMA, H. MELKAS (2007). "Impact of Safety-Alarm Systems on Care Personnel", *Gerontechnology*, 6 (2), pp. 112–117.
- RAHIMPOUR, M, N. H, LOVELL, B. G. CELLER, J. MCCORMICK (2008). "Patients' Perceptions of a Home Telecare System", *International Journal of Medical Informatics*, 77 (4), pp. 486–497.
- REDFORD, L. J., P. WHITTEN (1997). "Access to Technology: Unique Challenges for People with Disabilities", *Generations*, 21 (3), p. 24.
- REMAGNINO, P., D. SHAPIO (2007). Artificial Intelligence Methodes for Ambient Intelligence. *Computational Intelligence*, 23 (4), pp. 393–393.
- RICHARDSON, M. A. (2006). Interruption Events and Sensemaking Processes: A Narrative Analysis of Older People's Relationships with Computers (Waikato).
- RICHARDSON, M., C. K. WEAVER, T. E. ZORN (2005). "'Getting on': Older New Zealanders' Perceptions of Computing", *New Media & Society*, 7(2), pp. 219–245.
- ROGERS, E. (1962). Diffusion of innovations (London).
- RUDEL, D. (2007). "Information and Communication Technologies for Telecare of a Patient at Home/Informacijsko komunikacijska tehnologija za oskrbo bolnika na daljavo", *Rehabilitacija*, 6 (1–2), pp. 94–100.
- RUDEL, D., M. PREMIK (2000). "Oskrba na daljavo (tel-e-care) za zdravje starih, invalidov in trajno bolnih na domu", *Informatica Medica Slovenica*, 6 (1–4), pp. 111–114.
- SARANUMMI, N. et al. (2006). A Framework for Developing Distributed ICT Applications for Health, Distributed Diagnosis and Home Healthcare (Arlington).

- SIXSMITH, A., J. SIXSMITH (2000). "Smart Care Technologies: Meeting Whose Needs?", *Journal of Telemedicine and Telecare*, 6 (Suppl 1), pp. S190-192.
- SMOLEJ, S., M. NAGODE, P. JAKOB KREJAN (2010). *Izvajanje pomoči na domu: analiza stanja v letu 2009* (Ljubljana).
- SPONSELEE, A. et al. (2008). "Smart Home Technology for the Elderly: Perceptions of Multidisciplinary Stakeholders", *Communications in Computer and Information Science*, 11 (6), pp. 314–326.
- TETLEY, J., E. HANSON, A. CLARKE (2001). "Older People, Telematics and Care". In A. M., Warnes, L. Warren, M. Nolan (eds.) *Care Services for Later Life: Transformations and Critiques* (London).
- TUNSTALL (2011). Dales housing invests in advanced telecare for over 800 residents. TelecareNewsonline.
- WYLDE, M., M. S. VALINS (1996). "The Impact of Technology". In M. S. Valins, D. Salter (eds.) *Futurecare: New Directions in Planning Health and Care Environments* (Oxford).
- ZAJEC, K. (2006). Varovanje na daljavo v Sloveniji razvoj in perspektive (Ljubljana).

Boštjan Kerbler

Stare osobe i daljinska kućna nega: slučaj Slovenije

Rezime

Daljinska kućna nega (engl. telecare) omogućava starijim osobama da ostanu u svom kućnom okruženju što je duže moguće, gde bi bili u stanju da vode svoje živote što samostalnije sa najboljim mogućim kvalitetom života. No, nalazi raznih autora ukazuju na to da stariji ljudi uglavnom imaju negativan stav prema daljinskoj kućnoj nezi. Jedno od shvatanja koje često odvraća starije osobe od tog vida kućne nege je da je život u inteligentnom okruženju previše automatizovan. Oni često doživljavaju tehnologiju kao zamenu za klasičnu kućnu negu, što može rezultirati gubitkom socijalne interakcije i izolacijom. Stariji ljudi su takođe "tehnofobični", te se plaše inovacija i novih tehnologija. Često imaju manjak samopouzdanja, jer sumnjaju u sopstvene sposobnosti zbog čulnih i kognitivnih nedostataka. Dalje, stari su konzervativniji i ne žele da menjaju svoje navike i način života. Plaše se da će izgubiti svoju privatnost i pate od tzv. sindroma Velikog brata – osećaja da ih neko kontroliše i posmatra. Da bi se utvrdilo kakvi su stavovi starih lica prema daljinskoj kućnoj nezi u Sloveniji, sprovedeno je istraživanje o čijim se rezultatima diskutuje u ovom članku. Polazna pretpostavka se zasniva na nalazima različitih autora, a to je da stariji ljudi većinom imaju negativan stav prema daljinskoj kućnoj nezi. Istraživanje je sprovedeno u prvoj polovini 2012, putem intervjua "licem u lice". Istraživački uzorak činilo je 116 ljudi starosti 55 i više godina. Pre samog intervjua, pojam daljinske kućne nege je objašnjen na najjednostavniji i najrazumljiviji način

svim ispitanicima. U tu svrhu pripremljeno je pet kratkih "scenarija" u kojima je, kroz događaje svakodnevnog života, predstavljeno funkcionisanje i korisnost ove usluge, kao i uloga korisnika u odnosu na tehnologiju u kućnom okruženju. Rezultati istraživanja su pokazali da stariji ljudi u Sloveniji imaju pozitivan stav prema daljinskoj kućnoj nezi, što je suprotno našoj pretpostavci. Od ukupnog broja ispitanika, njih 78,4% je odgovorilo da želi da ima takvu uslugu u svojoj kući, čak i ako ne smatra da su sve karakteristike daljinske kućne nege pozitivne. To su većinom bile "mlađe" starije osobe (85,7%), u dobi od 55 do 64 godine. U starijim starosnim grupama učešće ispitanika sa pozitivnim stavovima opada, ali je, ipak, još uvek visoko (71,8%). Međutim, detaljnija analiza je pokazala da stariji ljudi i dalje imaju neke bojazni u vezi sa daljinskim sistemom kućne nege. Polovina od njih ne veruje da taj sistem omogućava produžetak življenja u njihovim sopstvenim domovima odnosno odlaganje institucionalne nege. Osim toga, jedna trećina ispitanika (34,5%) se plaši da će izgubiti privatnost. Manje negativnih mišljenja (22,4%) ispitanici su izrazili o sigurnosti i prilici da se živi nezavisno, što omogućava daljinska kućna nega. Najmanji procenat njih (11,7%) smatra da bi takva vrsta usluge smanjila posete rođaka, prijatelja i poznanika u njihovim domovima. Razlog zbog kog su stariji ljudi, uglavnom, izrazili pozitivan stav prema daljinskoj kućnoj nezi je rezultat činjenice da je pre istraživanja ovaj vid usluge detaljno prezentovan na najsveobuhvatniji način svim ispitanicima. Stoga, prema našem mišljenju, implementacija sistema sigurnosnog alarma u Sloveniji u poslednjih dvadeset godina nije bila neuspešna samo zbog nejedinstvenog tehnološkog sistema, ograničenog geografskog obuhvata i cene, već prvenstveno zbog niskog nivoa javne svesti i neefikasne informativne kampanje o ovoj vrsti usluge. Možemo zaključiti da bi bolje i efikasnije informisanje, naročito ako potencijalni korisnici imaju priliku da čuju sva pozitivna iskustva od onih koji već koriste ovakvu uslugu, pomoglo poboljšanom razumevanju funkcionisanja ovih servisa, čime bi se smanjio udeo negativnih stavova kod starijih lica. Podizanje svesti potencijalnih korisnika je, stoga, od ključnog značaja za prihvatanje daljinske kućne nege u društvu.

Ključne reči: stare osobe, stavovi, starenje kod kuće, informacione i komunikacione tehnologije, daljinska kućna nega