



Interactive CaringTV® supporting elderly living at home

Paula Lehto

Laurea University of Applied Sciences

RESEARCH

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Corresponding Author:

Principal Lecturer, PhD Paula Lehto
Laurea University of Applied Sciences
Metsänpojankuja 3
02130 Espoo
Finland

[Email: paula.lehto@laurea.fi](mailto:paula.lehto@laurea.fi)

Abstract

Background

Interactive CaringTV® is a Finnish innovation that was developed by Laurea University of Applied Sciences in 2006. CaringTV was developed through action research during three research projects. The aim of interactive CaringTV is to support the health and well-being of elderly people living in their own homes.

Method

The Safe Home project was based on action research, user-driven methods, and a case study. User-driven methods were applied in planning, implementing and evaluating the programme and eServices e.g. testing and evaluating peer support, including eConsultation as the methods for supporting clients' coping with life in their own homes. Cost-effectiveness and process modelling were studied through the case study.

Results

The user-driven approach and the collected data formed the basis for the interactive programme. The online CaringTV programme included content to: support everyday life for the elderly, safety, and activities of daily living, support social relationships, participate in rehabilitation and physical exercises, manage self-care, and health issues. Active participation in the CaringTV programme provided functional ability and everyday coping as well as a meaningful activity in everyday life.

Conclusion

CaringTV is an interactive platform to support elderly in their everyday life and help them cope at home. User-driven

methods enable participants' active involvement in planning interactive and online programmes and eServices via CaringTV. The ultimate goal of the CaringTV is to support elderly's health, wellbeing and interaction. CaringTV empowers elderly people to take responsibility for their own health care as part of healthy ageing.

Keywords

Action research, CaringTV, elderly, empowerment, participation, user-driven methods

What this study adds:

Elderly people are more likely to be able to remain in their own homes when they participate in online and interactive programmes that support health and well-being. User-friendly technology can support and activate coping by the elderly in their own homes as this type of interaction and participation may empower them. Action research and user-driven methods are congruent with health research, and enable the development of new services in health care.

Background

Interactive CaringTV® is a Finnish innovation which was developed by Laurea University of Applied Sciences since 2006. CaringTV was developed through action research during three research projects¹⁻⁵

The purpose of the latest research the Safe Home project was to investigate, develop, produce and evaluate interactive programmes and eServices for supporting the elderly living and coping at their own homes.¹ The findings of the research project were utilised in development of the CaringTV as a platform and as a service concept. The aim of the CaringTV is to produce interactive and online programmes and eServices. The themes and the content of CaringTV programmes are based on elderly's and experts' interviews. CaringTV uses videoconference technology and enables face-to-face discussions with clients, experts and other partners.¹

Method

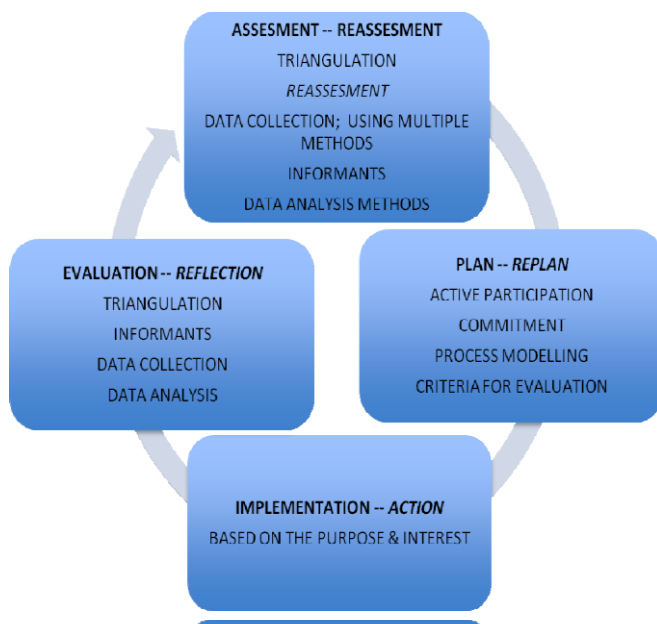
The Safe Home project was based on an action research, user-driven methods, and a case study. Action research as the methodological approach for the project formed the basis for the entire research process.¹ The action research



process implies that the subjects of research are active participants in the process of change and investigation process within a specific context. The aim of action research is practical: it uses a cyclic process of enabling planning, action and evaluation. The background of the actions is analysed involving reflection and development of alternative solutions to problems.⁶⁻¹⁰

Action research is based on critical knowledge interests, with the goal of producing new knowledge and forms of operation.¹¹ The basic principles of action research are practicality, actors' participation and the creation of new activities or interventions related to change.^{6,9,10} The cyclic process of action research, including data collection, and data analysis methods in Safe Home project,¹ is described in Figure 1.

Figure 1: Action research



The participants of the Safe Home project were elderly people (N=176) and experts (N=105). Of the elderly participants, 15 lived at home and the others lived in service houses or used the services at day centres. In addition, the focus group included 16 Swedish-speaking elderly people who participated in group activities at the day centres. The average age was 79.5 years. The age range was 60-94 years.

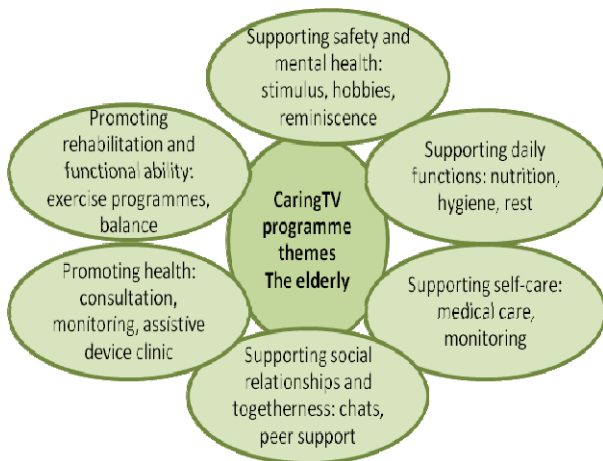
As a user study, the emphasis is on systematic collection and refining of personal experiences, and the user's participation in the development process. User data refers to information about the characteristics, features, forms, and aesthetic qualities of a product or service as perceived by an individual or a group. User data can be collected by

examining the experiences, visions, and prototypes of designers, although the collaboration with users is increasingly common.¹² In a user study, observation refers to monitoring the user in his or her own environment in order to collect information about the user, his or her activities and environment, and details about the product's use.¹³⁻¹⁴ In the Safe Home project, data was collected using multiple methods. In the first stage of the research, participants were interviewed in order to map and analyse their needs and expectations. This data was the basis for the content of the CaringTV programmes. The participants were also invited to participate in workshops where the group discussions continued with the goal of developing ideas for new solutions and virtual services. In the face to face workshop sessions the elderly and professionals as users discussed a lot and evaluated on going process of CaringTV. Active reflection and participation provided large amounts of data for analysis, and produced many ideas for eServices. Research material in the project was analysed by inductive qualitative content analysis and using Glaser's Six C's model.¹⁵

Results

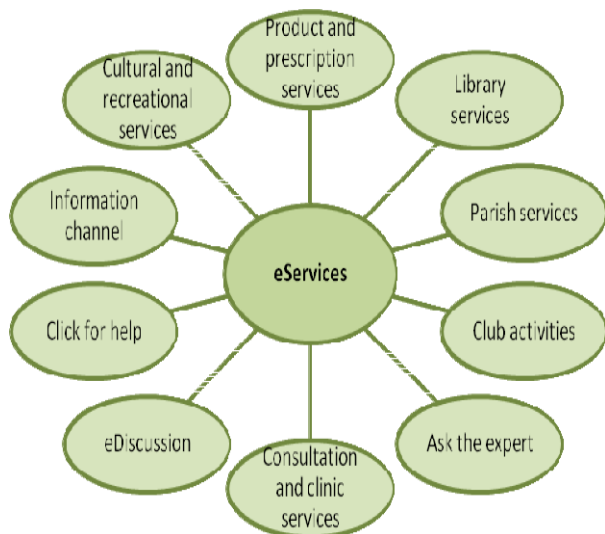
The user-driven approach and the collected data were the basis for the interactive CaringTV and its programmes. The content of interactive online CaringTV programmes provided support of the elderly in the following areas: their everyday life, safety, activities of daily living, supporting social relationships, participation in rehabilitation and physical exercises, managing self-care, and health issues. Active participation in CaringTV programmes supported the functional ability and everyday coping of the individual or group, and provided meaningful activity for their everyday lives. For example, for elderly people living in their own homes, the programme enriched the variety of daily routines, as well as providing peer support. The elderly discussed e.g. the meaning of the healthy food with the nutritionist. Based on the feedback the elderly said that the information was useful. Some of the elderly have made healthier breakfasts and meals. Figure 2 shows the richness of the themes for interactive and participative programme.¹

Figure 2: Example of the themes of interactive programmes



In this study, participants were simultaneously the users and developers of services.¹ Produced eServices emerged from the data (see Figure 3).

Figure 3: eServices



The case study used in this study also provided evidence that the development of virtual eHealth or eWell-being services for elderly coping at home are cost-effective. The pilot usage of virtual appointments for eNurse and eDoctor showed that the interaction and concentration are deeper and more intensive than in busy face-to-face appointments at a health care centre. The case study was conducted in one of the home care units in which once a day the home visit was compensated for CaringTV. Both the clients and nurses were satisfied with this new way of delivering the home care. Also the process modelling in this case study showed the evidence that it is possible to save

the time and costs when a health technology is applied in home care.¹

Evaluative analyses at various stages of the research process augmented the data and supported a user-driven approach and participation of the elderly. Through genuine partnership, participants were engaged and empowered.¹

The elderly participants emphasised that the importance of interaction manifests in activation, sense of belonging, care, and relaxation. Interaction meant a lot for the elderly participants. Interaction through CaringTV has provided an everyday contact that supported elderly people's feelings, functional abilities and independent living. CaringTV has provided a community for the elderly, and has become a part of their everyday lives.

The following quotation is from the original data in Safe Home study¹

"How happy we are, we get a chance to support each other."

As a concept, participation can be examined from the point of view of promoting and inhibiting factors. Factors that promote participation are motivation and willingness to participate, support and encouragement from another individual or group, and an inspiring environment. The contents and topicality of the programmes can also promote participation. The participants in the project were particularly sensitive and demanding, and the main factors for reluctance to participate included poor health, poor functional ability, and forgetfulness. In the case of the experts, unwillingness to participate in the project, personal attitudes, and lack of know-how were identified as inhibiting factors. Other factors that inhibited participation included technical problems, such as faults or breaks in sound, and problems related to the physical environment, such as noise.

Discussion

Customer-driven models create a basis for innovation and business operations that form a part of the great shift from service system orientation to customer orientation. Technical solutions are increasingly moving to customers' operating environments, either at home or work.¹⁶

Technological solutions were utilised with a user-driven approach in the development and testing of eServices for the Safe Home project. In this study the evaluation and feedback confirmed the shift towards user-driven or user-centred service design in a health care context.¹

According to previous studies by Topo, the use of technology may help to activate individuals or groups.^{17,18}



The use of technology reduces time spent in customer service and administration. Technology is also important in the deployment of new methods. Technology promotes opportunities for customers to participate in the development of well-being services. Findings of the Safe Home project provided greater evidence on feedback about interactive and technological solutions than the study by Mitchell et. al.¹⁹ The case study in the Safe Home project showed also that by using technology in health care and social services, both financial and allocated time resources can be reduced.¹ Jones et al.²⁰ and An et al.²¹ reported similar findings that technology has increased the equality of service users, improved availability, reduced the work of service providers and produced cost savings. Earlier studies by Russell²² and Theodoros and Russell²³ showed that the availability of virtual services can promote preventive health care, and it supports self-care.

Conclusion

Action research as a methodological approach in developing practices and methods in a health care and social welfare context is suitable for initiating a shift toward new user-driven ecosystems and models.

An active and enthusiastic approach to changing the professional paradigm to client-centred and open cooperative networks is required for this shift to proceed.

In the Safe Home project the most valuable concepts were: participation, interaction and empowerment. These concepts emerged as the result of inductive analyses. User-driven methods provided new knowledge and contents, which were utilised in CaringTV as a new virtual service. The genuine discussions and reflections with the elderly and the experts showed the valuable information for the development of CaringTV as a concept and for the service design towards the virtual health care.

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