L. DE WITTE, G.J. GELDERBLOM (Conveners). ***Implementation of technology in elderly care (NVG symposium).*** *Gerontechnology 2012;11(2):281;* doi:10.4017/gt.2012.11.02.388.00 **Participants**: *L. DE WITTE, G. WESTERHOF, J. NEYENS, M. SPREEUWENBERG, G.J. GELDERBLOM* (all from The Netherlands). **ISSUE** Technology provides many opportunities for providing care to support elderly persons. However, after developing such technology, the implementation often proves to be a serious hurdle. This symposium presents examples of some Dutch implementation projects involving virtual cycling, social robotics, care TV and other screen-based communication support. **CONTENT** The symposium will be opened with an introduction by the convenor. This will be followed by four case-studies presented by four researchers. The four case-studies will demonstrate the factors involved in implementing innovative technological care interventions in the daily practice of care for the elderly. The four presentations will be (i) E-mental Health: A randomly controlled trial of a life review intervention with email counselling by Dr Gerben Westerhof; (ii) DiFiets, cycling in a familiar virtual environment by Dr Jacques Neyes; (iii) The introduction of video-communication in community homes for the elderly: applications in care and community services by Dr Marieke Spreeuwenberg; and (iv). Social robot interventions in PsychoGeriatric care by Dr Gert Jan Gelderblom. **STRUCTURE** Introduction followed by four presentations leading to questions and discussion. **CONCLUSION** The presentations demonstrate the various aspects involved in implementation of innovative technology in care for elderly persons. Enhanced awareness of implementation issues regarding innovative care technology is essential in making the innovations effective in care for elderly persons.

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G.J. WESTERHOF, S.M.A. LAMERS, J. KORTE, E.T. BOHLMEIJER. ***E-mental health: An RCT of a life review intervention with email counselling.*** *Gerontechnology 2012;11(2):281-282;* doi:10.4017/gt.2012.11.02.299.00 **Purpose** There is increasing evidence that life review is an effective method to prevent depressive symptoms and promote well-being in older adults[1-3]. In a previous trial in a naturalistic setting, we found that group intervention combining life review with narrative therapy is effective[4]. This presentation describes the adaptation and evaluation of this intervention to a self-help protocol with e-mail counseling. **Method** A randomized controlled trial was carried out, comparing the life review intervention to a waiting-list control group as well as an expressive-writing group (total n=174). Participants followed a self-help book[5] and received counselling on their progress through e-mail. We used measures for depressive symptoms (CES-D)[6], overall psychopathological symptoms (BSI)[7] and positive mental health (i.e., emotional, psychological and social well-being; MHC-SF)[8]. As well as pre- and post-measurements, follow-ups at 3 and 9 months after the interventions were conducted. **Results & Discussion** Participants rated the life review intervention and the e-mail counselling positively. The condition of participants in both the life-review and the expressive-writing group improved more than the waiting-list control group in depressive symptoms (Cohen's d=0.30 for the intervention group), overall symptoms of psychopathology (d=0.37) and positive mental health (d=0.16). The self-help with e-mail counselling intervention is effective, showing that it is possible to provide effective e-mental health to older adults. An internet intervention is currently being developed and its usability is being tested.

References

1. Bohlmeijer ET, Roemer M, Cuijpers P, Smit F. The effects of life-review on psychological well-being in older adults: a meta-analysis. Aging and Mental Health 2007;11:291-300
2. Bohlmeijer ET, Smit F, Cuijpers P. Effects of reminiscence and life review on late-life depression: a meta-analysis. International Journal of Geriatric Psychiatry 2003;18(12):1088-1094; doi:10.1002/gps.1018
3. Pinquart M, Duberstein PR, Lyness JM. Effects of psychotherapy and other behavioral interventions on clinically depressed older adults: A meta-analysis. Aging & Mental Health 2007;11(6):645-657; doi:10.1080/13607860701529635
4. Korte J, Bohlmeijer ET, Cappeliez P, Smit F, Westerhof GJ. Life-review therapy for older adults with moderate depressive symptomatology: a pragmatic randomized controlled trial. Psychological Medicine 2011; 42(6):1163-1172; doi:10.1017/S0033291711002042

5. Bohlmeijer ET, Westerhof GJ. Op verhaal komen. [The stories we live by]. Amsterdam: Boom Uitgeverij; 2010
6. Radloff LS. The CES-D scale: A self-report depression scale for research in the general population. Applied Psychological Measurement 1977;1(3):385–401; doi:10.1177/014662167700100306
7. Beurs E de, Zitman F. De Brief Symptom Inventory (BSI): De betrouwbaarheid en validiteit van een handzaam alternatief. [Reliability and validity of a practical alternative to the SCL 90]. Maandblad Geestelijke Volksgezondheid 2006;61(2):120-141
8. Lamers SMA, Westerhof GJ, Bohlmeijer ET, Ten Klooster PM, Keyes CLM. The psychometric properties of the Mental Health Continuum-Short Form (MHC-SF) in the Dutch population. Journal of Clinical Psychology 2011;67:99-110

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J.C.L. NEYENS, E. VAN ROSSUM. ***DiFiets: Cycling in a virtual familiar environment.*** *Gerontechnology 2012;11(2):282;* doi:10.4017/gt.2012.11.02.475.00 **Purpose** The aim is to stimulate and encourage elderly residents with dementia in long-term care facilities to exercise more often and to have fun in the process, building inner motivation. An example of this would be indoor cycling on a home trainer whilst having the impression of biking outside in a familiar environment, such as a virtual bike ride to the bakery or through the village. The tangent project 'DiFiets', cycling in a virtual familiar environment" makes that possible. **Method** Virtual reality (VR) therapy employs the latest real-time graphics and imaging technology to place patients in a virtual world where they "experience" various visual and auditory stimuli. The BOZ Foundation (Bewegingsplezier voor Ouderen en Chronisch Zieken) has developed the innovative 'DiFiets' for the elderly[1]. It is set-up for cycling on a home trainer that initiates moving images on a television screen *(Figure 1)*. On screen, virtual bicycle routes are shown with images of environments that are familiar to the client e.g. the nearby environment of the nursing home. At present, ten bicycle routes are tested in three Dutch long-term care facilities. From November 2011 to February 2012 the DiFiets' experiences of patients and professional care givers were evaluated by Zuyd University of Applied Sciences in The Netherlands (RAAK innovative program 'Elderly care on the move'). **Results & Discussion** Using life images from a familiar environment of the residents makes this way of cycling more personal, more attractive, more challenging and fun for them. This type of exercise also creates social contacts through the interaction with other residents, family, and informal caregivers. Through the recognition of moving life images, we hope that more dementia sufferers will be motivated to exercise on a regular base. Apart from increasing physical fitness, the way mental health is hereby strengthened is also considered in this project.

Figure 1. DiFiets in use

References

1. Stichting-BOZ; www.stichting-boz.nl; retrieved May 3, 2012

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M.D. SPREEUWENBERG, C.G. WILLEMS, L. VAN DER HEIDE, Y.P. MAN. **The introduction of video-communication in community-dwelling elderly.** Gerontechnology *2012;11(2):283;* doi: 10.4017/gt.2012.11.02.358.00 **Purpose** Worldwide demographic changes have led to an increasing number of people aged 65 years or older. To enable them to live independently at home in a safe and responsible way, it is important to create a more sustainable health and social environment for them. The Expanded Chronic Care Model describes how older people can be active and how they can obtain relevant information that enhances their management skills[1]. CareTV is a technological solution, which allows older people who live in residential homes to interact with carers, family and friends from their home. This presentation reports on our findings on video-communication technology and whether it is a valid tool for the elderly to engage in meaningful social contacts and to avoid loneliness. In addition we report on another study on additional communication needs of elderly people. **Method** A total of 130 inhabitants of residential home organisation 'Proteion Thuis' were connected to CareTV. Participants included men and women with an average age of 73.8 years. The CareTV duplex video/voice network allowed participans to communicate 24/7 with their (care) environment. The CareTV applications are (i) an alarm service, (ii) care services, (iii) a good morning/good evening service, (iv) welfare and housing, and (v) family contact. During the one-year trial period, feelings of loneliness and safety were measured using a validated questionnaire[2]. In addition, a user-centred design with 20 inhabitants of residential homes was conducted to reveal further communication needs. **Results & Discussion** Results show that with CareTV the average feeling of loneliness at group level significantly decreased ($p<0.001$) from 6.0 to 4.0 (SD=3.9) during the course of the study on a scale from 1 to 11 (*Figure 2*). Social loneliness (5 items) as well as emotional loneliness (6 items) showed significant decreases. This could, however, also be explained by the Hawthorne effect. Further research focuses on the benefits of CareTV on, for example, delaying hospital admissions and reducing physical care contacts. The benefits and costs will be compared in a cost-effectiveness study. The user-centred study revealed that inhabitants of residential homes are also interested in contact via social platforms with their general practitioner, the geriatric specialist in the hospital, and with the wider community. Care and social platforms should be integrated in the future.

References

1. Wagner EH, Austin BT, Korff M von. Improving outcomes in chronic illness. Managed Care Quarterly 1996;2:12-25
2. Jong-Gierveld J de, Kamphuis F. The development of a Rasch-type lonelinessscale. Applied Psychological Measurement 1985;9(3):289-299; doi:10.1177/014662168500900307

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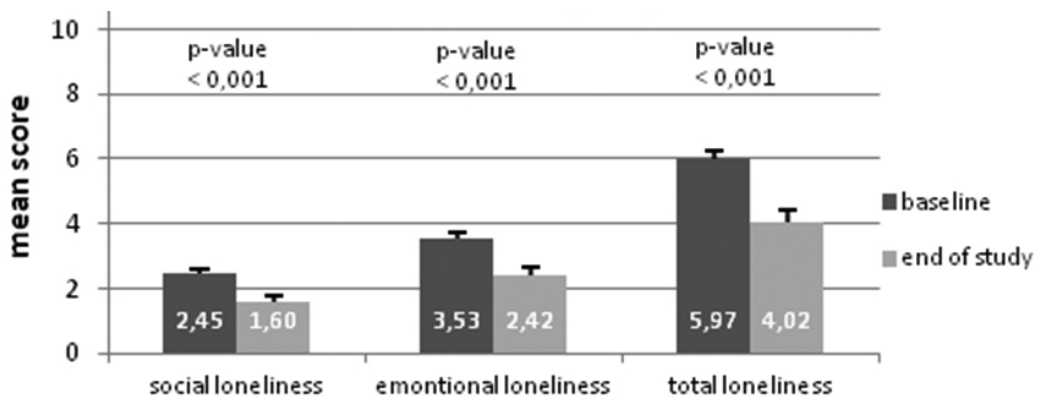

Figure 2. Differences between mean loneliness at group level at baseline and at the end of the study

G.J. GELDERBLOM, R. BEMELMANS, P. JONKER, L.P. DE WITTE. ***Social-robot interventions in psycho-geriatric care.*** *Gerontechnology 2012;11(2):284;* doi:10.4017/gt.2012.11.02.387.00 **Purpose** Robots are making their first steps towards adoption as innovative concepts in care[1]. Specifically social robotics, with the seal robot PARO (*Figure 3*)[2] in the frontline, is finding its way to care institutions in many countries. To date, this success is not supported with scientific evidence as there is hardly research reported on its effectiveness[3]. Moreover, there is no clear description of PARO-interventions available clarifying how to make a PARO-assisted application effective. This situation results in limited guidance on the application of the interventions in practice, limited understanding of the impact of these interventions on the quality of care, and also limited understanding on how to further improve the application of social robotics. This study reports on the feasibility evaluation of three PARO-assisted interventions, as part of the preparation of a subsequent larger effect study. The practical feasibility of the interventions needs to be established before the interventions can be robustly applied in an effect study. **Method** Following the development of three interventions based on care staff expertise[3], in this study piloted them in psycho-geriatric care-settings in the Netherlands. Introducing these interventions also involved a short training of staff on the basics of PARO-use and individual client matching (n=23) with one of the three interventions by care staff. The interventions were: (i) individualised therapeutic effect i.e. reducing anxiety or reducing unrest; (ii) supporting care staff during daily care tasks i.e. visits to pedicure; and (iii) supporting family visits by offering an opening for communication. Participants were involved in one of the three interventions during a two-week period. Standardised qualitative reporting was obtained from the directly involved care staff, by one-on-one interviewing to enhance in-depth understanding and by additional observation by the researcher. **Results & Discussion** Out of the 23, 2 participants showed no interest and rejected PARO in the intervention 1, and with 1 participant intervention 2 failed to lead to the desired effect. Various levels of success were recorded for this intervention for other participants on an individual level. The interventions proved to be feasible, could be combined with the ongoing care for the patients, and could to be added to existing care. The procedure, including the training when the robot was first introduced, increased the acceptance among the involved care staff. The practicalities of the interventions were monitored and improved to ensure proper intervention application during the subsequent large evaluation of the effectiveness of the PARO-interventions in PG-care.

References

1. Butter M et al. Robotics for Healthcare, Final Report. Brussels: European Commission, DG Information Society; 2008
2. Wada K, Shibata T, Saito T, Sakamoto K, Tanie K. Psychological and Social Effects of One Year Robot Assisted Activity on Elderly People at a Health Service Facility for the Aged. Proceedings of the IEEE International Conference on Robotics and Automation, 2005; doi:10.1109/ROBOT.2005.1570535
3. Bemelmans R, Gelderblom GJ, Jonker P, de Witte L. Socially Assistive Robots in Elderly Care: A Systematic Review into Effects and Effectiveness. Journal of the American Medical Directors Association 2012;13(2):114-120.e1; doi:10.1016/j.jamda.2010.10.002
4. Gelderblom GJ, Bemelmans R, Spierts N, Jonker P, Witte L de. Development of PARO Interventions for Dementia Patients in Dutch Psycho-geriatric Care. Lecture Notes in Computer Science, 2010, 6414,253-258; doi:10.1007/978-3-642-17248-9_26

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Figure 3. PARO seal robot