

# “Would You Like to Skype With Your Daughter?”

## A Qualitative Feasibility Study of Video Telecommunication in a Psychogeriatric Hospital

Raphael Niebler, PhD, Gerhard W. Eschweiler, MD, Thomas Dresler, PhD, Monika A. Rieger, MD, Florian G. Metzger, MD

### VIDEO TELECOMMUNICATION IN PSYCHOGERIATRICS

Video telecommunication (VTC) is a popular and widespread technology which was introduced to patient care as long-distance psychiatric consultation, called telemedicine or telepsychiatry, respectively, and has steadily gained popularity. Research projects focus on medical consultations via VTC in rural institutions, where specialists, psychogeriatric diagnostics, and cognitive assessments are not easily available. Most studies have been conducted in nursing facilities or with hospitalized patients, demonstrating the feasibility of interventions and the reliability of assessments using telemedicine<sup>1,2</sup> to connect patient and physician or specialized nurse. However, the technology of VTC can also address loneliness and the lack of social support in older adults by connecting them with family members. The positive effect of psychosocial interventions and social support on older adults with depression and on preventing depression has been demonstrated.<sup>3–5</sup> Even geriatric patients with cognitive impairment benefit from psychosocial support.<sup>6</sup> Psychosocial interventions are potentially more effective than pharmacological interventions among patients with noncognitive symptoms such as depression.<sup>7</sup> A

**Author Affiliations:** Geriatric Centre at the University Hospital Tuebingen Drs Niebler, Eschweiler, Dresler, and Metzger); Department of Psychology, Eberhard Karls University of Tuebingen, (Dr Niebler); Department for Psychiatry and Psychotherapy, University Hospital Tuebingen (Dr Eschweiler); LEAD Graduate School & Research Network, Eberhard Karls University of Tuebingen (Dr Dresler); Institute of Occupational and Social Medicine and Health Services Research, University Hospital Tuebingen (Dr Rieger); Coordination Centre, Core Facility for Health Services Research, Faculty of Medicine, Eberhard Karls University of Tuebingen (Dr Rieger); and Vitos Klinik für Psychiatrie und Psychotherapie Haina (Dr Metzger), Germany.

The study was funded by the young scientists programme of the German network “Health Services Research Baden-Württemberg” of the Ministry of Science, Research and Arts in collaboration with the Ministry of Employment and Social Order, Family, Women and Senior Citizens, Baden-Württemberg. The work of the Institute of Occupational and Social Medicine and Health Services Research Tuebingen is supported by an unrestricted grant of the employers’ association of the metal and electric industry Baden-Württemberg (Südwestmetall).

The authors have disclosed that they have no significant relationships with, or financial interest in, any commercial companies pertaining to this article.

**Authors’ Contributions:** F.G.M., G.W.E., and M.A.R. designed the study. F.G.M. and R.N. screened the patients. R.N. conducted the data acquisition. R.N. performed the analysis. F.G.M. and R.N. drafted the manuscript. G.W.E., M.A.R., and T.D. revised the manuscript.

**Corresponding author:** Raphael Niebler, PhD, Department of Psychology, Eberhard Karls University of Tuebingen, Schleichstraße 4, 72076 Tuebingen, Germany (raphael.niebler@uni-tuebingen.de).

This is an open-access article distributed under the terms of the Creative Commons Attribution-Non Commercial-No Derivatives License 4.0 (CCBY-NC-ND), where it is permissible to download and share the work provided it is properly cited. The work cannot be changed in any way or used commercially without permission from the journal.

Copyright © 2019 The Authors. Published by Wolters Kluwer Health, Inc.

DOI: 10.1097/CIN.0000000000000534

### KEY POINTS

- Video telecommunication (VTC) as psychosocial support for psychogeriatric patients with cognitive impairments
- Introduction of VTC in a psychogeriatric ward to assess acceptance and feasibility
- Qualitative analyses of interviews with nursing staff, patients, and their relatives portray VTC as either highly beneficial or totally unacceptable for patients
- Nursing staff is overwhelmed by usage of technology and can hardly implement VTC in daily routine

lack of social support may accelerate physical and mental decline.<sup>8</sup> Therefore, any improvement of psychosocial support may help in to prevent or stabilize psychogeriatric diseases. These effects may be especially useful in the inpatient care of psychogeriatric patients suffering from acute symptoms (eg, depression, delirium).

Video telecommunication offers another way of providing psychosocial support through personal contact with family during hospitalization. In addition, relatives lacking time or those who live farther away and are therefore unable to visit face-to-face more frequently could support their hospitalized family members more easily. There may be mutual benefits of VTC for inpatients and families. Since current research focuses on connecting patients, caregivers, or professionals with other professionals, or patients of nursing facilities and their relatives with one another, we specifically investigated the feasibility of VTC for patients with cognitive impairment and their relatives in the new setting of an acute psychogeriatric ward. Additional social support may facilitate recovery and prevent more confusion at an unfamiliar location.

We adopted a naturalistic setting by integrating VTC in the daily routine of the ward and observed the acceptance of VTC by nursing staff, patients, and families. Additionally, we were interested in how VTC influenced the relationship of patients and families.

### INTRODUCTION OF VIDEO TELECOMMUNICATION IN AN ACUTE PSYCHOGERIATRIC WARD

An informational event for nursing staff was used to introduce VTC into the psychogeriatric ward of the Department of

Psychiatry and Psychotherapy at the University Hospital Tuebingen. We used tablet PCs (iPad 2 Wi-Fi 16 GB; Apple Inc, Cupertino, CA) and the freeware Skype (Microsoft Corp, Redmond, WA), since it is broadly available for all platforms. We recruited dyads of patients with cognitive impairment and their relatives (ie, partners, children, grandchildren, or friends) by addressing them directly. All patients received psychiatric treatment as usual with psychopharmacological, psychotherapeutic, and sociotherapeutic components during the study period.

To assess the process from all angles, we gathered qualitative data in three different ways. First, we interviewed the participating patients (weekly, or just once if they refused VTC), the patients' relatives (weekly, or just once if they refused VTC), patients of an outpatient clinic in a focus group, and the nursing staff of the psychogeriatric ward (focus groups, three times during ongoing intervention). Second, while screening potential participants, we documented the reasons given for not participating in the study. Those participants agreed to the use of this information. Finally, we documented all developments and actions during the study in a research diary.

**Recruitment**

We screened 41 patients for participation in the study; seven dyads of patients and their relatives were willing to participate in the study for a longer period and use VTC. Five patients, four relatives, and two dyads of patients and relatives who were unwilling to use VTC gave their consent for a refusal interview. Six members of the ward's nursing staff took part in the focus group interviews. Due to the difficulty of recruitment, we also formed an additional focus group of seven patients in a psychogeriatric outpatient clinic to gain a better understanding of elderly patients' attitudes toward VTC. All screened individuals (patients and relatives) gave written consent for participation in the study and the use of their data.

A summary of the recruitment, as well as the interview data used, is given below (Figure 1). The study was approved by the ethics committee of the University Hospital of Tuebingen (502/2011BO1, 03.11.2011).

**Data Analysis**

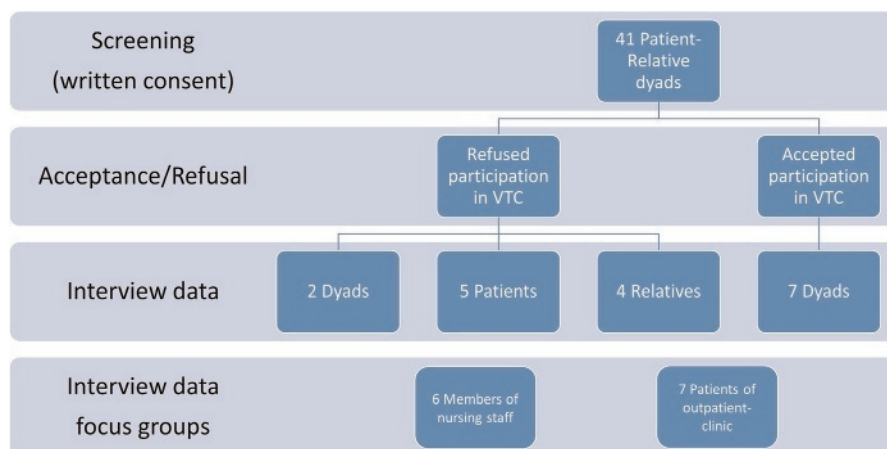
All interviews were semistructured and followed an interview guideline. Audio recordings of the interviews were transcribed and analyzed using a text-based, theory-driven, stepped content analysis.<sup>9</sup> The interviews were categorized independently by one author and two student researchers. The latter were trained in the method but unaware of the study details. Subsequently, consensus was reached through discussion, and repeating categories were identified. In total, 1971 codings were found, which were categorized in three layers with 14 main categories, 47 subcategories of the first order, and 46 subcategories of the second order. Seven categories were cross-referenced between the different groups of subjects. Due to the high importance of those categories for the research questions, the content and meaning were analyzed. The goal of this methodical approach is to reach theoretical saturation regarding VTC in this setting: meaning that all aspects are mentioned repeatedly, so that new interviews would not yield new information and no new categories could be formed.

**RESULTS**

The results summarize the combined findings of the different data sources described above. We distinguish between the groups of participants, but also report findings for the relationship between patients and relatives. Examples of citations for different categories are shown in Table 1.

**Relatives**

Only younger relatives (ie, children or grandchildren) wanted to participate in VTC. The spouses of the elderly patients



**FIGURE 1.** Flowchart and summary of used interview data.

**Table 1. Citation Examples**

Categories	Citation Example(s)
<b>Reasons to participate in VTC in patient's view</b>	<p>...every 1 or 2 days, a video call would be very nice. (patient)            OK, one does it so that... that... that something changes, so it gets better, then, I think, it is always a good thing, one is open for it. (patient)            ...since you can see and hear each other. (patient)            Yes, personal development... especially since I am in this... in this regard I am completely ignorant, I want to be able to join in conversation with my grandkids and great-grandkids. (patient)            For two reasons: First, I am curious. I want to see how this works. Second, I want to support you. (patient)</p>
<b>Reasons to participate in VTC in relative's view</b>	<p>...that we had the possibility to see and hear each other. Since I couldn't come to Tuebingen quickly, and recently the timing in general has been inopportune, seeing as I have been caught up with work and other matters. (relative)            I have two expectations. The first is for my mother, that she will have more contact with me as well as with her grandson and my wife, with whom she gets along very well. These two can unfortunately not come to see her very often. Secondly, I hope that I myself will have a better overview of the situation: How is she doing today? (relative)            I think it's better for people, who, I don't know, see each other just once a week. Those, I imagine, would use that more often. (relative)            Yes, well, I worry quite often and it could be, that I maybe, on days that I see her, that is, when we talk, that I maybe feel better or feel a weight lifted from me. (relative)</p>
<b>Negative expectations and rejection reasons</b>	<p>It is too much for me to think about and deal with. (patient)            These [VTC] are the things that frighten the elderly. (relative)            She [ie, the patient] is not able to process [the VTC] any more. (relative)            I have to take time... this is a burden, which sounds harsh. But I do indeed need to schedule the telephone date, and I have to be at home at a certain time...(relative)</p>
<b>Interpersonal relationship as important moderator</b>	<p>She [ie, the patient] has now seen my son... he is her only grandson. And this, I believe, made her very happy..., particularly because he looks similar to his great-grandmother, her mother. She never actually saw her mother, she only knew her from photographs. Perhaps it gives her great joy to see that there is someone who looks similar to her mother. (relative)</p>
<b>The relation of age, psychopathology, and technology in the patient's view</b>	<p>Well, a little fear of such novelties, but also worry for the expensive technical devices... (patient)            She would be too old for that. (relative)            I have no idea how elderly people without experience with computers can deal [with VTC]. (patient)</p>
<b>Patient's and relative's handling of VTC</b>	<p>It is not possible to place the tablet in a standing position; this is disturbing for her. She has to lay it down. And she is not capable of switching it off or on. (relative)</p>
<b>Relative's expectations and the reality</b>	<p>...actually I would continue, but I don't want to feel obligated to phone with him. ....I have some other troubles, all of the brothers and sisters are coming to me. I don't want to stress myself too much.</p>
<b>Setting of a psychogeriatric ward (view of team members)</b>	<p>Well, somebody has to receive the video call and bring the tablet to the patient. Then, you have to check whether or not the patient is correctly handling the tablet. I mean, these are expensive devices. The tablet should not fall to the floor; therefore, somebody must be present during the call.            I couldn't manage the camera. I had never done this before... I heard the ring, accepted and saw my phone partner, but he couldn't see me. It was quite demanding, and I felt inept.</p>

claimed not to have the required skills, Wi-Fi, or the motivation to use the tablet PCs at home. Lack of interest or general rejection of modern technology was also mentioned by older adult relatives. The younger relatives welcomed the idea of VTC. All relatives reported time restrictions and inflexible schedules due to workload, so that the scheduling of VTC exchanges was difficult. Interested relatives saw VTC as a chance to reduce the perceived obligation of personal visits by replacing those with VTC. They expected to receive better insight into the patient's life and hoped that their participation could help with the patient's well-being in general. However, in the course of the study, the relatives regarded VTC as only the second best solution, being no equal substitute for personal visits. Video telecommunication contacts with strongly impaired patients were described as more demanding. On the other hand, the combination of regular visual and auditory contact with visual feedback gave the relatives a better idea of the patient's current state of health. Relatives therefore reported emotional relief but also feeling obliged to visit more often, during times of apparent worsening of the patient's well-being. The more intense involvement during episodes of worsened psychiatric or mental state was a particular burden for the relatives. Therefore, neither patients nor relatives reported a lower frequency or shorter duration of personal visits during their participation in the VTC study.

### Patients

Patients cited the possibility to connect with their relatives and curiosity as the most important motivational factors for VTC. The patients' perspectives on VTC in general were strongly affected by current psychopathology, but age and attitude toward technology also seemed to play a role. Many patients refused the technology itself, without giving particular reasons. Others stated that they were too old for VTC, and in their opinion the effort to learn how to use VTC was too high in relation to potential benefit. Patients using VTC described themselves mostly as generally interested and open to new experiences. Patients with acute depressive symptoms perceived the handling of VTC as an excessive demand and expressed a certain fear of technology. This corresponded with diffuse beliefs about hidden dangers on the Internet in the form of scammers or data thieves. These worries were independent of delusional ideas and were reflected upon by the outpatient focus group as rooted in insufficient knowledge about the possibilities and functionality of the Internet and modern technology. In addition, they also reported negative attitudes toward technology based on possible abuse of social networks or scandals in data security. Having the option to communicate with loved ones and not feel forgotten through this contact was noted as being particularly positive. However, the majority of patients did not remember any details of the conversations carried out using VTC. Finally,

some patients were not able to enjoy the potential benefits of VTC due to sensory impairments, such as visual problems, hardness of hearing, or sensory deficits, for example, caused by polyneuropathy. Therefore, design adjustments (Figure 2) on the tablet were necessary, which are discussed below. Depending on previous experience, patients described the medium as sometimes demanding in its use.

### Dyad Interaction

Both subjects described the experience of VTC as pleasant, but also as an emotional burden. The unfamiliarity of the medium to the patients, the parallel management of talking and keeping oneself in the picture for the camera, and a perceived inability to handle the device were stressful for patients as well as relatives. Both sides reported having to instruct each other to correct the position of the camera during VTC contacts. In each case, the preexisting interpersonal relationship of the patients and their relatives was either a benefit or an obstacle for VTC, but in no case neutral. An intact relationship prompted higher motivation for VTC, whereas strained relationships made VTC contacts less likely, with some relatives refusing the idea of VTC completely due to a burdened history with the patient. Regular VTC interactions in general acted as catalysts for the patient-relative relationship in both ways. Participants with close relationships found it difficult to communicate via VTC on a daily basis due to lack of new topics to discuss. The number and significance of topics to talk about were also the most important factor for the duration of the VTC interactions.

### Nursing Staff

The staff revealed a lack of interest in using modern technology, regardless of age. They felt overwhelmed in using the tablet PC and overstrained by the requirement of embedding the VTC in the ward's daily routine.

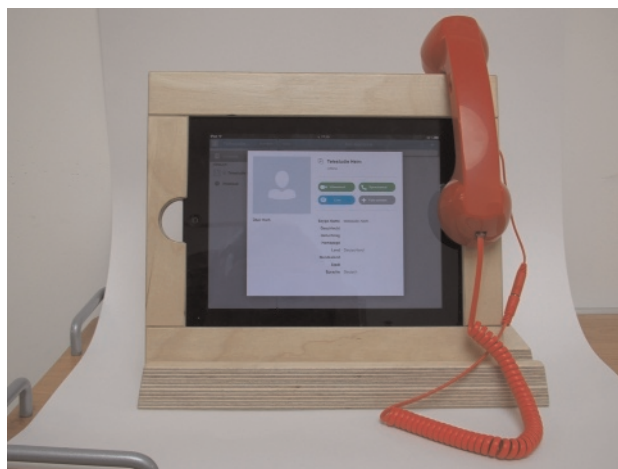


FIGURE 2. Altered tablet design for VTC.



## DISCUSSION

This is the first feasibility study to investigate social support to patients in an acute psychogeriatric setting via VTC.

### Acceptance and Impact of Video Telecommunication

Similar to previous studies in nursing homes,<sup>10,11</sup> the overall acceptance of VTC was low. Almost none of the screened patients had experience with computers or communication technology, which is in line with other observations for this age cohort.<sup>12</sup> Patients, as well as some of older adult relatives, declined the use of technology in general out of fear and mistrust or because they felt overwhelmed or too old for it, meaning the expected cost-benefit ratio for VTC was too low. Although depressive symptoms played a role in refusing VTC, the aforementioned arguments seemed independent of psychopathology and in contrast to previous findings in a representative study of older adults.<sup>13</sup> Younger relatives seemed more open to the idea of VTC, possibly because they already had experience with VTC. This means that only a small number of older adult patients who were interested in learning to use a new technology were possible targets for VTC. This may also be true for older adult relatives, but not for the younger relatives of those patients.

Reducing the feeling of guilt to spend more time with the hospitalized patients was an additional benefit for relatives using VTC and acted as an additional motivator. This is a concurrent finding with dyads in nursing homes.<sup>14</sup> The visual channel in VTC provides more information and a better impression of the patient's current state. This effect was also described in a qualitative assessment of telemedically enhanced contact in an emergency care program for older adults.<sup>15</sup> This meant an exchange of emotional information for both the patient and the relative and in some cases provoked further involvement of the relatives in the case of a patient's acute deterioration. This effect may have been increased by the time-intensive nature (ie, keeping each other in the camera frame) of VTC contacts, which diminished the perceived enjoyment. This observation is in line with previous studies.<sup>10,11,16,17</sup> The conversation was often stagnant, and topics (ie, health and current events) did not differ between the participants, which is in line with the findings in nursing homes and congregated living facilities.<sup>12</sup> The preexisting relationship between patient and relatives strongly influenced the decision to refuse or use VTC. Consequently, the relationship between patients and relative participating changed due to VTC. The patients reported no decrease in the frequency and intensity of the personal visits of their relatives, but rather an increase in some cases. Therefore, VTC acted more as a catalyst and less as a substitute for personal social support. This benefit of VTC is much more important in the setting of an acute inpatient treatment facility than in a nursing home.<sup>11,16</sup>

### Adaptations in the Course of the Study

Implementing VTC in the daily routines of the nursing staff as a "simply call in" option proved difficult. Independent of age, the nursing staff was neither interested nor experienced in VTC. This finding supports prior studies.<sup>11</sup> In addition, this greater staff requirement was simply not compatible with ward routines, particularly regarding the more pressing duties in patient care and the already high requirements relating to overload, as often seen with hospital staff.<sup>18</sup> The research team therefore attended all subsequent VTC interactions between patients and their relatives by arranging fixed appointments. Therefore, almost all VTC contacts were supervised. Slow recruitment led to an alteration of the recruitment strategy. First, patients were introduced to the possibilities of tablet PC via their interests (eg, simple games, music, and videos) and then asked if they were interested in using VTC to communicate with their relatives. After patients reported difficulties hearing the spoken word and holding the tablet without accidentally pressing the touch screen during VTC, we retrofitted the device with a telephone handset, a wooden frame, and a mount for the tablet to facilitate VTC (Figure 2).

### Implementation of Video Telecommunication in the Psychogeriatric Ward

As in this study, other current studies provide VTC under constant supervision. Such constant supervision, which has been discussed previously,<sup>1</sup> does not conform to the concept of social support in psychogeriatric wards via VTC in an embedded form. Encouraging patient communication is a core competence in nursing,<sup>19</sup> but the patients alone should be in charge of the actual communication, particularly when considering privacy issues. Since at least some patients and relatives appeared to benefit from VTC in the acute psychogeriatric setting, there seems to be a need to motivate and educate nursing staff in the application of VTC, given that enough staff are available to conduct VTC. One future goal during psychogeriatric inpatient care should be enabling suitable patient-relative dyads to use VTC devices and thereby strengthen their competence in actively engaging in social interaction via different media. The devices used need to be adapted to the needs of the patients before training to encourage the nursing staff to use and implement VTC in their wards is considered.

### Limitations

Despite multiple challenges in implementing and conducting the study, the compiled results depict opportunities and challenges of VTC in an acute psychogeriatric setting. There are multiple limitations, however. Since we investigated the feasibility of VTC in the specific environment of an acute psychogeriatric ward, transfer to other settings or a general model of VTC acceptance is limited. The number of subjects was small. The findings are in need of replication, especially

since theoretical saturation was most likely not reached, further aspects and findings may still be missing. Due to the high involvement of study personnel in the actual VTC contacts, the setting is less natural than it could be.

## CONCLUSION

Adapting the VTC devices to address the communication habits of older adult patients and simplify usage for the nursing staff would help acceptance. An unsupervised communication should be the focus of future VTC use studies. We therefore propose that VTC be conducted in telephone boxes with telephone handsets as simplified user interfaces. The development of such setups requires more studies, preferably through user-centered iterative methods in human-machine interface. The implementation nevertheless depends on the availability of well-trained nursing staff with enough resources to enable implementation, which may be the greatest challenge.

Despite benefits of VTC in the form of positive social contacts and additional personal visits, the target group for VTC seems limited to patients who are open to new experiences and their younger relatives. Since openness is rather a personality trait than a state, an approach with a selection of interested patients using a more intensive introduction seems to be more useful than an open offer for all patients according to a scattergun approach. However, the threshold to engage in VTC can be lowered by involving younger relatives who may act as kind of coach for the technology and thereby reach more older adult patients. Despite well-trained and sufficiently staffed wards equipped with adequate devices, the identification of suitable dyads of patients and relatives is another challenge in implementing VTC with psychogeriatric patients. Further studies should also address the issue of efficient screening instruments for suitable candidates.

## Acknowledgments

*Special thanks to the study group "Psychophysiology and Optical Imaging" for support and Sven Schwendemann, René Markovits-Hoopi, Domenic Wilhelm, Elisa Semler, and Christine Preiser for help with data acquisition and analysis. Thanks to Anke Wagner for her helpful comments on the manuscript.*

## References

- Ramos-Ríos R, Mateos R, Lojo D, Conn DK, Patterson T. Telepsychogeriatrics: a new horizon in the care of mental health problems in the elderly. *International Psychogeriatrics*. 2012;24(11): 1708–1724.
- Gentry MT, Lapid MI, Rummans TA. Geriatric telepsychiatry: systematic review and policy considerations. *The American Journal of Geriatric Psychiatry*. 2018.
- Cohen GD, Perlstein S, Chapline J, Kelly J, Firth KM, Simmens S. The impact of professionally conducted cultural programs on the physical health, mental health, and social functioning of older adults. *The Gerontologist*. 2006; 46(6): 726–734.
- Forsman AK, Schierenbeck I, Wahlbeck K. Psychosocial interventions for the prevention of depression in older adults: systematic review and meta-analysis. *Journal of Aging and Health*. 2011;23(3): 387–416.
- Yuen HK, Huang P, Burik JK, Smith TG. Impact of participating in volunteer activities for residents living in long-term-care facilities. *The American Journal of Occupational Therapy*. 2008;62(1): 71–76.
- Van't Leven N, Prick AE, Groenewoud JG, Roelofs PD, de Lange J, Pot AM. Dyadic interventions for community-dwelling people with dementia and their family caregivers: a systematic review. *International Psychogeriatrics*. 2013, 25(10): 1518–1603.
- Brodsky H, Arasaratnam C. Meta-analysis of nonpharmacological interventions for neuropsychiatric symptoms of dementia. *The American Journal of Psychiatry*. 2012;169(9): 946–953.
- Potts MK. Social support and depression among older adults living alone: the importance of friends within and outside of a retirement community. *Social Work*. 1997;42(4): 348–362.
- Maying P. *Qualitative Inhaltsanalyse: Grundlagen und Techniken*. Weinheim: Beltz; 2003.
- Mickus MA, Luz CC. Televisits: sustaining long distance family relationships among institutionalized elders through technology. *Aging & Mental Health*. 2002;6(4): 387–396.
- Sävenstedt S, Zingmark K, Sandman PO. Video-phone communication with cognitively impaired elderly patients. *Journal of Telemedicine and Telecare*. 2003;9(Suppl 2): S52–S54.
- Tsai HH, Tsai YF. Older nursing home residents' experiences with videoconferencing to communicate with family members. *Journal of Clinical Nursing*. 2010;19(11–12): 1538–1543.
- Choi NG, Dinitto DM. Internet use among older adults: association with health needs, psychological capital, and social capital. *Journal of Medical Internet Research*. 2013;15(5): e97.
- Demiris G, Oliver DR, Hensel B, Dickey G, Rantz M, Skubic M. Use of videophones for distant caregiving: an enriching experience for families and residents in long-term care. *Journal of Gerontological Nursing*. 2008;34(7): 50–55.
- Shah MN, Morris D, Jones CM, et al. A qualitative evaluation of a telemedicine-enhanced emergency care program for older adults. *Journal of the American Geriatrics Society*. 2013;61(4): 571–576.
- Sävenstedt S, Brulin C, Sandman PO. Family members' narrated experiences of communicating via video-phone with patients with dementia staying at a nursing home. *Journal of Telemedicine and Telecare*. 2003;9(4): 216–220.
- Tsai HH, Tsai YF, Wang HH, Chang YC, Chu HH. Videoconference program enhances social support, loneliness, and depressive status of elderly nursing home residents. *Aging & Mental Health*. 2010;14(8): 947–954.
- Rotter I, Kemicer-Chmielewska E, Lipa P, et al. Assessment of psychosocial work conditions of nurses at selected hospital wards. *Medycyna Pracy*. 2014;65(2): 173–179.
- Adult-Gerontology Acute Care Nurse Practitioner Competencies*. Washington, DC: American Association of Colleges of Nursing; 2012.