Use of Videophones for Distant Caregiving

An Enriching Experience for Families and Residents in Long-Term Care

ABSTRACT

The objective of this study was to explore the role of videophone technology in enhancing the distant caregiving experience of and communication between residents of a long-term care facility and their family members. Ten participants—4 residents of an independent retirement facility and 6 family members—were recruited. A videophone was installed in each resident's apartment, and another was mailed to the remote family member. Participants were asked to conduct a videocall at least once per week for 3 months. Exit interviews assessed general impressions of videophone communication, the relationship between residents and family members, stress, burden, and isolation. Participants were enthusiastic and emphasized a sense of closeness, the inclusion of the resident in family interactions, and reduced feelings of guilt and isolation as key benefits. New models of care are needed to challenge the existing paradigm, which often excludes distant caregivers from the care process. Technology can facilitate this process by bridging geographic distance.

George Demiris, PhD; Debra R. Parker Oliver, PhD; Brian Hensel, PhD; Geraldine Dickey, MS; Marilyn Rantz, PhD, RN; and Marjorie Skubic, PhD

The decision to move into a long-term care facility is an emotional struggle for older adults, as well as their family members. For families, acknowledging that a loved one needs more care than can be provided in a home setting is not easy. This transition becomes especially stressful for family members who, due to geographic distance, become less involved in the care of their loved one. Information technology tools have the potential to address such geographic barriers; thus, it is essential to explore and evaluate their use with long-term care residents and their distant caregivers.

BACKGROUND

The transition of moving a loved one into a long-term care setting often results in family members simultaneously experiencing loss of control, guilt, disempowerment, sadness, and relief (Drysdale, Nelson, & Wineman, 1993; Rodgers, 1997; Whitlatch, Schur, Noelker, Ejaz, & Looman, 2001). A prevailing view is that the move into a long-term care facility dictates the termination of family caregiving (Kellett, 1999). However, recent literature has found that when older adults move to long-term care, family members are introduced to different, yet still potentially stressful involvement (Dellasega & Mastrian, 1995; Ross, Rosenthal, & Dawson, 1993). Although moving a loved one who needs care into a long-term care facility relieves some of the caregivers' physical and time pressures, caregivers perceive little change in their well-being after such institutionalization (Dellasega, 1991). Instead, perceptions of stress and burden persist with the same intensity as they do for those who care for older relatives at home (Dellasega, 1991).

Few published reports address interventions aimed at family members after their loved one has been institutionalized (Drysdale et al., 1993). The distant caregiving experience, especially for family members who are geographically separated from the institution in which their loved one now lives, has not been investigated extensively. Although interventions involving distant caregivers in the design and delivery of health care services to residents are lacking, caregivers themselves want to continue to be involved and desire more information from staff about their loved one's daily life (Hertzberg, Ekman, & Axelsson, 2001).

Sustaining and enhancing relationships and communication between distant caregivers and residents is important not only to the family members but also to the residents (Bauer & Nay, 2003), as they often struggle with isolation and lack of a social network. The loneliness resulting from social isolation is significantly higher in nursing home residents than in community-dwelling older adults (Pinquart & Sorensen, 2001). High frequency of social contact between residents and their children or grandchildren was found to have a significant effect on lowering social isolation (Drageset, 2002).

Geographic distance and time constraints often prevent distant caregivers from frequently visiting their loved ones. These challenges are even greater when the caregivers live an extensive distance from the institution. The use of videophone technology provides an opportunity to bridge the geographic distance between family members and nursing home residents. Several studies have indicated the potential of such technology in the home setting, for example, for disease management (Demiris, Speedie, & Finkelstein, 2001), hospice care (Parker Oliver, Demiris, & Porock, 2005), and rehabilitation support (Hauber & Jones, 2002).

Only three studies have investigated the use of videophones in a long-term care facility. Mickus and Luz (2002) conducted a pilot study investigating the use of videophones to allow residents to communicate with family members and found that the technology was valuable for both distant family and residents. Satisfaction and perception of usefulness were linked to the individuals' ability to use the technology. Another study by Sävenstedt, Brulin, and Sandman (2003) explored the use of videophones by residents with dementia in a nursing home. With staff supervision and assistance, residents were able to communicate via videophone with family members, despite their cognitive impairments. The interaction increased the attention and focus of the residents and gave family members a greater sense of involvement (Sävenstedt et al., 2003). Fi-

nally, in a case study by Hensel, Parker Oliver, and Demiris (2007) involving a nursing home resident and her niece, the videophone technology was found to provide social presence for the family member, who expressed that the experience was "almost like being in the same room" as her aunt.

STUDY PURPOSE

On the basis of the encouraging findings of these preliminary studies, we aimed to further explore the role of videophone technology in enhancing the distant caregiving experience and communication between residents and family members. Specifically, the purpose of this study was to identify potential benefits and challenges of videophone technology for long-term care facility residents and their family members and determine whether the use of videophones can increase or enhance communication between these individuals. In addition, we aimed to explore potential psychosocial benefits of videophone communication for both residents and their family members.

METHOD

Setting

The study setting was an assisted living retirement facility in the midwestern United States. The design of the facility was based on the Aging in Place model, offering varied services as needed rather than forcing older adults to move to more skilled nursing environments as their health care needs increase (Marek & Rantz, 2000).

Recruitment

A graduate research assistant (GRA) (G. Dickey) attended several weekly resident meetings in the facility and explained the purpose of the study. Individuals interested in participating scheduled to meet with the GRA at a later point and discuss the consent form and study procedures. If residents' family members also agreed to be contacted by the GRA, they scheduled a telephone conference to discuss the study procedures. Eligibility criteria included that both residents and family members had to be mentally competent, have a regular telephone line in their residence, and, in instances of hearing impairment, still be able to carry out regular telephone conversations.

When both parties (residents and family members) signed their consent forms, the GRA installed the videophone in the residents' apartments and mailed a videophone with detailed instructions to the family members. The study was approved by the participating university's institutional review board.

Participants reported a sense of closeness during the videocalls,... and reduced feelings of guilt and isolation.

Videophone

The videophone used in this study was the Beamer™ Videophone (Vialta, Inc., Fremont, CA), which operates over regular telephone lines and costs approximately $150 per unit. During the authors' preliminary work, this model was found to be user friendly for adults age 65 and older (Demiris, Parker Oliver, & Courtney, 2006). The videophone can display three kinds of real-time images during a videocall: self, other party, and a combination of both, depending on user preference. It plugs into a regular telephone and does not interfere with its use. A videocall is possible only when both parties have videophone units and consent to a videocall (by pressing the video button). In all other situations, users can continue making and receiving regular calls through their telephone without activating the video feature.

Data Collection and Analysis

Both residents and family members were asked to conduct a videocall at least once per week (or more if they chose to do so) and complete a form after each videocall to document its technical quality. We used a previously developed instrument for assessing the technical quality of a "virtual visit" in home care (Demiris, Speedie, Finkelstein, & Harris, 2003), a video-based interaction between health care providers and patients or caregivers.

The form included the date, start and end times of the videocall, and the participants' initials. The main section of the form contained five items about the technical quality of the videocall. The first two items addressed participants' observations regarding the frequency of difficulties they experienced with the videophone's audio and image. The next two items addressed problems with video and sound on the conversation partner's end, as reported to the participants. The last item addressed possible disconnections and their frequency.

A percentage score for the overall technical quality of each videocall (100% = perfect technical quality with no problems or disconnections) is calculated at the end of this section. This instrument has been tested for reliability and validity and used to rate the technical quality of videocalls in home care settings (Demiris et al., 2003; Hensel et al., 2007). The forms were collected and entered into SPSS, version 14, for analysis. We entered the data twice to ensure accuracy.

Participants (residents and family members) were interviewed after using the videophone for 3 months. The interview protocol addressed six domains:

- General impressions of videophone communication (e.g., perceived advantages and disadvantages).
- Affective and cognitive dimensions of conversations between resident and family member (i.e., assessing perceptions of the value of videophones in conversations conveying factual information and description, emotional conversations and discussions of feelings, and attempts to persuade or convince and address conflict).

- Quality and frequency of communication and quality of relationship between resident and family member (and the role of videophone in this context).
- Stress and burden (e.g., feelings of stress, nervousness, depression, general anxiety, tension).
- Assisted living facility placement stress (for interviews with family members only).
- Isolation and loneliness (for interviews with residents only).

The protocol was reviewed by two experts in gerontology and communication research to address face validity. Interviews were audiotaped and transcribed. Transcript data were then analyzed using a qualitative approach by which codes were inductively generated (Miles & Huberman, 1994). The thematic data analysis was performed by two members of the research team (G. Demiris, D.R. Parker Oliver), and a third member (B. Hensel) confirmed the validity of interpretations.

RESULTS

A total of 10 individuals participated in the study: 4 residents and 6 family members (2 residents each participated with 2 family members). All of the participating family members were children of the residents except for one, who was the niece of the resident. All residents were older than age 65.

The original study plan focused on the recruitment of family members residing at least 20 miles from the facility; however, when one daughter who lived locally became ill and unable to visit her father, we discovered the value of the instrument for families who live locally as well.

Two residents died before study completion, resulting in a total of eight exit interviews (2 residents and 6 family members). The average duration of a videocall was 43 minutes (SD = 11.2), with the shortest call lasting 14 minutes and the longest 1 hour and 14 minutes. The average technical quality was 94.75% (SD = 7.97); the minimum score observed was 57.1% and the maximum was 100%, indicating an overall very good level of videocall audio and video quality.

All respondents stated that they appreciated being able to see their loved one's facial expressions and to have a sense of closeness. One respondent stated:

> It was great to see Dad, and I think that one of the times we used it [the videophone], we gave him some good news and just being able to see the smile on his face was really good.

Another respondent pointed out the value of the visual aid in assessing one's condition:

> I can remember this one time when I had the flu…. He [participant's father] was worried about me being sick, and it helped him to be able to see me and realize that I wasn't on my death bed…. I felt good because I could see that he had a smile on his face. He could answer the phone and have that tone of voice that I could hear he was just feeling down and depressed, and we could click on the videophone, and, especially with Dad's personality, he would start to get a grin on his face and start saying hello and being a clown on the phone. He enjoyed it, and it was ideal.

A consistent theme in the responses of both residents and family members was the inclusion of the resident in family interactions, which was facilitated by the video component. A family member described how the videophone was used when the grandchildren would visit, and on one occasion, the resident was able to watch a football game with the family:

> On special occasions it was nice to have a visual. When kids gathered at the house, Dad could see them; they could see their grandfather. When the kids visited on holidays, when [football team] beat [football team] we were all dressed up and yelling, and it was fun. I could see him laughing. He could see me wearing a sombrero and a [football team] shirt.

Another resident stated:

> I was amused that my niece had a grandchild, and they wanted me to see the grandchild. So I was ready to visit and I got a kick out of it because every time they said, "Say hi to Aunt _____," she would take a little peek at the screen and then hide behind her mother's skirt.

Most family members emphasized the importance of having the resident see new family members or friends over the videophone, as this allowed residents to feel like they are still part of the family group. One family member stated:

> With the videophone, he could see his granddaughter's new boyfriend. It did put him more at the center of family gatherings. And we tried harder to physically show items to him, the way we dressed, people in the background.

Concerns were also expressed regarding the use of the technology. Four respondents identified occasional audio delays as distracting or confusing. Two family members reported that videocalls can be time consuming or inconvenient, as the videophone required them to sit in front of the camera during the whole conversation rather than being able to carry out other tasks in the house during the conversation, as they would with mobile phones or handsets.

When commenting on the affective and cognitive dimensions of the conversation, all respondents saw a benefit in being able to see their loved one's facial expressions and part of their residence. Three respondents believed the videophone can be useful in conversations that involve factual information (i.e., when one is describing symptoms or an injury). All respondents saw an advantage in using the videophone over the regular telephone in conversations that involved emotions and feelings or when trying to persuade or convince the conversation partner. Eight respondents were unsure whether the videophone would be more or less appropriate to address conflict, and 2 believed the videophone was more appropriate than a regular telephone, as one can assess the emotional status and sincerity of the conversation partner. One family member stated:

> She [her mother] can be stubborn at times, and if I can see the expression

KEYPOINTS

Videophones for Distant Caregiving

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1. The decision to move into a long-term care facility is an emotional struggle for older adults, as well as their family members.
2. Enhancing communication between long-term care residents and distant caregivers is important not only to the family members but also to the residents, as they often struggle with isolation and lack of a social network.
3. Long-term care residents and their distant caregivers were greatly satisfied with regular use of videophones for their communication and emphasized a sense of closeness, the inclusion of the resident in family interactions, and reduced feelings of guilt and isolation as key benefits.
4. New models of care are needed to challenge the existing paradigm, which often excludes distant caregivers from the care process; technology can contribute to this process by bridging geographic distance.

on her face, I know how to go with my conversation and I know how to get the point across.

In terms of the quality of communication and frequency of interaction, 4 respondents believed that these factors did not change because of the videophone, whereas the remaining 6 respondents stated that the videophone made the communication more personal and comforting. Interestingly, these 6 respondents had also experienced the highest level of technical quality of the videocalls, as reported in the technical quality forms. One respondent stated that conversations lasted longer with the videophone and were more fulfilling.

Three family members stated they did feel guilt about their loved one moving into a retirement community and that the videocalls played a role in reducing this guilt. One participant said:

> We don't live together, and sometimes I could feel guilty about that. This [the videophone] took away some of the guilt because I could actually see him [his father]. I felt very much like I was closer in proximity, and if he had taken a turn for the worse…this would have given me a better way to assess how he is.

Another family member commented on the sense of connectedness the videophone provided and wished she had used that tool for another parent who had passed away in a nursing home:

> The connectedness was great with the videophone. I wish I had one for Dad, if I knew they existed, I would have purchased one for him and me. It would have so reduced my stress.

The videophone communication also contributed positively in reducing feelings of isolation and loneliness for residents. One resident stated:

> I think the videophone was a help in fighting feelings of depression. Time just changes depression, it just reduces it overall, you come to the conclusion that this is where you are. The visual aspect helped me to feel like I was visiting when we spoke.

Another participant commented:

> Oh, yes, the videophone contributed positively to our relationship. We developed a way of kind of kissing each other over the phone or giving each other a hug over the phone. We would both always leave it with a big smile on our face. And a couple of times, my sons were at my house when we were having conversations, and they got in the picture as well, and we were like three clowns trying to cheer him [her father] up. But we did it.

DISCUSSION

This was an exploratory study with a limited sample and, as such, has limited generalizability. However, the findings do indicate the potential of videophone technology to improve quality of life for long-term care facility residents and distant family members. All participants were enthusiastic about their ability to conduct videocalls. Although technical issues and challenges were identified, respondents emphasized the sense of closeness and the inclusion of the resident in family interactions as key benefits of this technology. The videophone contact could play a role in reducing social isolation and loneliness of residents in long-term care. In addition, these experiences support an earlier finding by Hensel et al. (2007) that the videophone promotes a social presence for the resident and family member. This finding indicates a need for further exploration of the relationship between social presence and social support for long-term care residents.

The successful implementation of these commercially available, low-cost tools needs to be further explored (Parker Oliver, Demiris, & Hensel, 2006). For example, such a video-based tool can also allow staff to communicate with the family members, enhancing their relationship with distant caregivers. A long-term care facility may use this technology to connect family members not only with their loved ones but also with the entire care team, allowing distant

caregivers to be included in the decision making process.

As Kellett (1999) pointed out, new models of care are needed that will challenge the existing paradigm, which often excludes distant caregivers from the care process. The ability of family caregivers to redefine their caring roles within the long-term care facility context will depend on the degree to which the institutions support family involvement. Information technology can contribute to this process by bridging geographic distance and enriching existing communication channels and introducing new ones.

NURSING IMPLICATIONS

This study shows that information technology can provide useful tools for nurses as they aim to improve services provided to long-term care residents and assess issues of social isolation. In many cases, commercially available, low-cost tools can be powerful in including distant caregivers in the design and delivery of health care services. Long-term care administrators and nurses can use such technology to include distant caregivers in the decision making process and to facilitate teamwork. Nurses can redefine the caring roles of family caregivers in the long-term care facility context by empowering residents and their families and bridging geographic distance.

SUMMARY

This study explored the role of videophone technology in enhancing the communication between residents of a long-term care facility and their remote family members. Ten participants—4 residents and 6 family members—were recruited. A videophone was mailed to the remote family members and installed in residents' apartments. Participants were asked to conduct a videocall at least once per week for 3 months and at completion of the study discuss their experience with and impression of videophone communication. Participants reported a sense of closeness during the videocalls, the inclusion of the resident in family interactions, and reduced feelings of guilt and isolation. Technology can help redefine the role of distant caregiving in long-term care facilities.

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ABOUT THE AUTHORS

Dr. Demiris is Associate Professor, Biobehavioral Nursing and Health Systems, School of Nursing, University of Washington, Seattle, Washington; and Dr. Parker Oliver is Associate Professor, Family and Community Medicine, School of Medicine, Dr. Hensel is Postdoctoral Fellow of Health Management and Informatics, School of Medicine, Ms. Dickey is a predoctoral student, School of Social Work, Dr. Rantz is Professor, School of Nursing, and Dr. Skubic is Associate Professor, School of Engineering, University of Missouri-Columbia, Columbia, Missouri.

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Address correspondence to George Demiris, PhD, Associate Professor, Biobehavioral Nursing and Health Systems, University of Washington, BNHS Box 357266, Seattle, WA 98195; e-mail: gdemiris@u.washington.edu.