Objectives: This case study examines the uses, perceived advantages and disadvantages, and expectations of videophone communication by a nursing home resident and a geographically distant family member.

Methods: Interviews were conducted with these participants, one in person and one by phone.

Results: Themes identified suggest that, with the added visual component, there are additional uses and psychosocial benefits of videophone communication when compared to the telephone for both nursing home residents and family members.

Conclusion: The study suggests that the use of the technology is not only feasible in an institutional setting but also beneficial. Further research with larger groups is supported. (J Am Med Dir Assoc 2007; 8: 123–127)

Keywords Social support; communication; technology; videophone

In placing a loved one in a long-term care facility, many family members experience a loss of control, disempowerment, guilt, simultaneous feelings of sadness and relief, a sense of failure, depression, and anxiety.1–4 These feelings are often not attended to and may go unrecognized. In this context, interventions including or targeting family members of older adults placed in an institutional facility have not been a focus of research.

Nursing home residents are more likely to become lonely and socially isolated than older adults dwelling in the community.5 Increased social support has been found to decrease social isolation and depression6–9 and can have a positive effect on health and promote life satisfaction.10,11 Family contact provides an important source of social support to residents, as well as strengthens relationships between nursing home staff and the family.12,13 It is often the case, however, that geographic distance becomes a barrier to frequent communication between nursing home residents and remote family members. Telecommunication technology may facilitate this contact in cases where distance is a barrier to face-to-face interaction. Mickus and Luz14 evaluated the perceived quality of contacts via videophone communication between 10 pairs of nursing home residents and their geographically distant family members. Most of the participants thought that videophones enhanced the quality of social interaction.

CONCEPTUAL FRAMEWORK

The analytical framework of the study is derived from 2 related constructs, communication bandwidth and social presence. Communication bandwidth has been defined as the numbers and types of communication cues a technology can accommodate.15 (This is different from technological bandwidth, which determines the bits-per-second that can be digitally transmitted, although greater technological bandwidth can enhance communication bandwidth.) For example, both videophones and telephones convey spoken words and vocalics or paralanguage, which includes pitch, loudness, tempo, pauses, and inflection.16 However, videophones can also accommodate visual nonverbal cues such as facial expressions, gestures, trunk and limb movements, and posture.16 Additionally, physical appearance cues such as clothing and hairstyle, as well as the other’s surrounding environment, are communicated. Greater communication bandwidth facilitates a greater sense of what Short et al label social presence.17 They hypothesize that different communication media accommodate varying degrees of “social presence,” which impacts personal interaction. Perceptions such as, “It was just as though we were all in the same room,” are representative of social
presence in mediated communication. Short and colleagues found face-to-face communication to have the highest degree of social presence, followed by video (with audio) communication, audio-only communication and, last, written communication. These findings suggest that the addition of visual nonverbal cues enhances social presence. The addition of nonverbal cues to verbal-only cues is also postulated to be particularly important to sending and receiving affective information. Communication bandwidth and social presence provide a framework for examining the participants’ perceptions of videophones as compared to telephones for interpersonal communication.

OBJECTIVE

Social presence, facilitated by greater communication bandwidth, is important to mediated interaction between residents in long-term care facilities and their families. If social presence can increase social support and reduce loneliness, then videophone technology may be a valuable intervention in long-term care. The objective of this case study was to identify themes in user perceptions of videophone communication and explore the feasibility of using the technology in a future resident-caregiver intervention project.

METHODS

This qualitative study used a semi-structured interview guide developed by the research team, which consisted of researchers from social work, health informatics, and mass communication. The team possessed experience in instrument development; knowledge of pertinent literature in telecommunication technologies, long-term care, and health communication; and practical experience in long-term care settings. The instrument’s goals included rich description and explanation of any perceived advantages and disadvantages of videophone (as compared to telephone) communication. Questions were broad and developed from concepts in interpersonal communication (including via technology) and research examining the experiences of family caregivers and care receivers in nursing home placement and explanation of any perceived advantages and disadvantages of videophone (as compared to telephone) communication. Questions were broad and developed from concepts in interpersonal communication (including via technology) and research examining the experiences of family caregivers and care receivers in nursing home placement.

Fig. 1. Videophone used by participants.

The videophone model (Figure 1) used for this study was the Vizufon GVP-1000F (C&S Technology Inc, Gyung Gi-Do, South Korea), which operates over POTS (plain old telephone system) and complies with the International Videophone Standard ITU-TH.324. The participants communicated via videophone on a weekly basis. At the end of 3 months, interviews of about 45 minutes were conducted in person with the resident and by telephone with the family member. The study duration was set at 3 months, as this was perceived to be sufficient time for participants to become familiar with the technology and explore its benefits and challenges.

Interviews were recorded, transcribed, and analyzed by the research team. Transcripts were evaluated for instances of consistency and similarity in responses within and (for questions asked of both) between participants. Such responses were inductively grouped into themes or categories. Consensus among the research team was achieved in identifying and labeling themes. Validity was addressed by discussing the results with the participants.

RESULTS

There were initial concerns with technical quality and usability of the videophones. However, these issues were independently remedied by the niece, and once resolved, both participants deemed the technical quality and usability to be acceptable. These initial technical and usability concerns were the only disadvantages of the videophone communication expressed by the participants. Both participants reported overall satisfaction with the technology and were disappointed the study was ending.

The data confirmed the videophones’ expected impact in terms of communication bandwidth and social presence. Analysis revealed 5 distinct themes: (1) It was almost like being in the same room; (2) I could see how she is doing; (3) I can see that she’s being cared for; (4) I shared more of her life; and (5) We had a lot of fun.

It Was Almost Like Being in the Same Room

This theme was identified based on comments from Laura, the niece:
And it was almost like being in the same room. . . . It felt like I was in the same room with my Aunt.

Nancy, the nursing home resident, reinforced this perception when she reported: “I just felt about like I was up there [at Nancy’s home in the mountains].”

I Could See How She’s Doing

Evidence for this theme includes the following comments of the niece:

Especially now with Christmas and everything, I could see how she’s doing and everything. . . . And . . . she’s happy about things. . . . Using the videophone . . . you basically can see she is all right.

The nursing home resident also found benefit in using the videophone for evaluating how her niece was doing:

Well . . . I can see her face. I think that makes it easier to tell what a person feels like. . . . that she is happy . . . and working hard. . . . And if she has trouble, then I can tell by looking at her.

I Can See That She’s Being Cared For

This theme is related to the previous one, but it was expressed only by the family member. It suggests an effect of the intervention on the family member. Comments included:

I can see that she’s being taken care of. . . . It helps a lot. . . . I know they’re taking care of her. . . . her hair . . . and stuff like that . . . keeping her up to snuff. . . . I can see that she is being cared for.

I can see that she’s being cared for is different from I could see how she’s doing not only because it applies solely to the family member but also because it specifically concerns perceived evidence about nursing home care and not a broader, general evaluation of well-being. For example, a nursing home resident could be doing poorly in that she doesn’t want to be in a nursing home and wishes to be at home, even while being cared for with excellent nursing and support care.

I Shared More of Her Life

Evidence for this theme reported by Laura, the niece, includes:

The other day, knowing that she was going to lose the phone, I showed her the sunrise on the mountaintops where I live . . . with the holidays and everything, she [Aunt Nancy] got to show me her Christmas tree and . . . cards and stuff like that with the videophone . . . and she got to see the dogs and stuff, and . . . was excited about that. . . . Of course, being on the [tele] phone . . . is great . . . but it was even better [on the videophone], because when people come, like nurses or employees who came in during our [video]phone conversation, she could say, ‘Hey, this is my niece’ . . . and ‘look at her,’ and we could wave at each other and stuff like that. And it was just kind of nice for her to show people who I was.

Aunt Nancy reinforced this in reporting:

She showed me all their house, their dogs, and everything. . . . I shared more of her life. And she showed me her Christmas tree . . . and her friend who comes in. Just her whole house . . . So I was very interested in seeing where she lived.

We Had a Lot of Fun

This final theme was seen in comments by the niece such as, “It was fun. I think she and I both enjoyed just seeing each other . . . I enjoyed seeing her in real life.” This was reinforced by her aunt in the nursing home: “She’d get her dogs up in her lap, like they were talking on the phone. We had a lot of fun.”

Other Findings

The transcripts showed that both participants were satisfied with the amount of information conveyed, despite limitations of the videophones that included a delay between what was verbally said and visually seen because of the slower POTS connection and the small screens that could only accommodate the face and a portion of the shoulders. Neither participant reported any problem with the delay that may have negatively impacted the flow of conversation. Participants were asked whether videophones or regular telephones were better for cognitive-oriented conversations that include a lot of descriptive information and, conversely, for affective-oriented conversations that include emotions or feelings. Both felt that videophones were better for both types of conversations.

DISCUSSION

While the findings from this small project confirm the earlier work of Mickus and Luz,14 we hope that the analysis using a social presence framework to identify themes is helpful in understanding the potential benefits of the technology, including how the video component may enhance the quality of social interaction. The finding of social presence is consistent with that of Cukor et all23 in their study of videophone use in telepsychiatry, that “social presence. . . can be created at levels sufficient for some telepsychiatric applications. . . with even low-cost POTS videophones.” Additionally, findings support the role of visual nonverbal signals in communicating affective information. Descriptions of affective interaction were found in a number of comments by both participants across the identified themes. The role of visual nonverbal cues in enhancing affective communication was also found by Adachi and Miyasaka24 in their case study of videophone communication between parents with children with cystic fibrosis.

Perceptions of increased social presence and enhanced affective communication were found even with the limited screen size of the videophone and the lack of synchronization between what is said and what is seen because of the slower POTS connection. Such limitations were not detrimental to participants’ perceptions, possibly explained by realistic expectations that were congruent with actual performance of the videophones.

The theme of I could see how she’s doing reminds us that, just as family members are concerned about the well being of a loved one in a nursing home, the nursing home resident is similarly concerned about family members at home. This and the related theme, I can see that she’s being cared for, were also found in Savenstedt et al’s25 qualitative study of videophone use between family members and loved ones with dementia in a nursing home. These researchers found that family members felt more involved with the residents and their care via videophone communication. The family member in the present study was reassured about the placement decision by seeing that her aunt was doing all right and was being well

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cared for. Of course videophones may also transmit visual information of the opposite. Depending on individual circumstances, the additional visual component may be comforting in alleviating concerns or discomforting in raising them.

The theme I shared more of her life was not found in the review of other studies and suggests further research into this potential benefit of videophone (as compared to telephone) communication. The effect on residents and family members of being able to visually share important people (eg, friends or favorite nurse aides) and things (eg, a new home, Christmas trees, or a new dog) represents an area of research with potential benefits. The visual images allowed each participant to feel a part of the other’s environment and to experience the other’s setting in ways that would not be possible without the video component. In this way, the theme was similar to it was almost like being in the same room, and raises the potential research question of whether this type of sharing increases perceptions of social presence.

Whereas each of the first 4 themes described sheds light on videophones as a communication channel, the final theme, We had a lot of fun, sheds light on the relationship. The quality of the relationship between participants in a communication dyad affects their communication. The shared approach or attitude represented in this theme likely contributed to these participants’ positive perceptions and overall experience in using the videophones. Research shows, however, that different dynamics operate in general for particular relationship dyads (eg, parent-child or husband-wife). For example, power and control generally operate differently in a parent-child relationship than in an aunt-niece relationship. In interpreting the findings of this case study, one must keep in mind the type and quality of relationship between these participants, as well as their specific circumstances (eg, their physical and cognitive health). Participants in this study reported psychosocial benefits in using videophones to check on each other and share each other’s lives. Others with different relationships or in different circumstances may not perceive benefits in such uses.

The case study methodology is limited in its focus on a single case. Furthermore, there were no standardized measures or comparison data gathered as it was an exploratory qualitative study. These findings cannot be generalized. The method can, however, provide rich qualitative findings that may point to research questions or hypotheses that can then be pursued in larger studies. Further research with larger groups and more rigorous designs is called for. Future designs should include both pre- and post-test quantitative measures as well as random assignment to videophone-only and telephone-only groups. Use protocols, such as frequency and range of duration of communication, should be included to ensure valid comparisons. Quantitative measures should include those that test whether the communication bandwidth and social presence theoretical constructs explain perceived advantages of videophone over telephone communication. Furthermore, research should measure whether loneliness and social isolation for residents, and difficult feelings related to the placement decision for family members, are differentially affected by videophone compared to telephone communication. Last, nursing home staff should be included in future research, to assess their attitudes toward videophone use, as they could ultimately affect adoption and implementation, and to gain their feedback on resident use of and satisfaction with the technology, as a means of feedback in addition to residents’ self-reports. The current study provides a theoretical framework to test and elaborate in this future research.

CONCLUSION

Findings suggest that the addition of visual nonverbal cues in videophone as compared to telephone communication enhances perceptions of social presence and contributes especially to affective communication. The visual component allowed both participants to better evaluate how the other was doing and also facilitated a nursing home quality assurance function for the family member. An apparently unique use of sharing lives was found, representing a potentially beneficial advantage of videophone over telephone communication, particularly when distance allows only infrequent face-to-face visits.

Themes identified in this case study suggest that, with the added visual component, there are additional uses and potential benefits of videophone communication as compared to telephone communication. Findings support videophones as an enhanced channel of communication between nursing home residents and family members with potential additional psychosocial benefits for both. These benefits may help to ameliorate difficult feelings for family members as well as social isolation for their loved ones in nursing homes. The case study acknowledges the importance of expectations for videophone communication in user satisfaction and recognizes that individual relationships and circumstances will influence user perceptions.

REFERENCES