
Poster

Enhancing Video Chat Applications for Home Health Care

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Abstract

Background: Estimates show that up to 87% of seniors would like to “age in place.” Often, such people are remote from their families and health care providers. Acquisition and telemetry of data and bio-signals from personal health care instrumentation is of great value, but we feel that this does not tell the complete story, because we are dealing with humans. A brief video chat, via personal computer, can usually provide a great deal of information concerning a person’s well-being. An individual’s mood, physical status, and energy level and the state of their surroundings can frequently be determined in a one-minute video chat. While these evaluations are qualitative, they can be very useful in answering the simple, important question “Is this person OK?” A video chat can also help build constructive social bonds between patients and providers because the telecommunication is no longer “faceless.” People who are aging in place are generally not the best computer users. Even if a person is proficient with the use of computers, issues with vision and manual dexterity can present obstacles to the use of video chat applications such as Skype. We have designed and implemented a low-cost system, comprised of a small “helper” program and a wired keypad, which operates with a personal computer and obviates the difficulties experienced by many less experienced and older users. Very simply, this system makes it easier for many people to communicate with their families and healthcare providers.

Objective: Our goal was to simplify the use of video chat applications. A conventional desktop is often visually cluttered or has one application window obscuring another. Navigation with a mouse or other pointing device can be difficult for people with impaired vision and those with tremors, arthritis, or other dexterity limiting factors. We designed and built a “helper” program that, in conjunction with a dedicated large symbol keypad, lets a user initiate a video chat just by pressing a couple of buttons.

Methods: At present we have conducted a small pilot study (N=8) with naïve computer users who want to video chat with family members. Participants in the study were chosen because they had difficulty initiating video chats. We asked this group to use our system and measured time required to initiate a video chat.

Results: All subjects were able to initiate video chats in <30 seconds. The users were all able to terminate the chats when desired. In simple terms, the naïve users were able to start and end calls when they wanted to. Users expressed satisfaction at being able to control this aspect of their computers without technical support from others and enjoyed chat interactions.

Conclusions: Video chat applications can be made simpler and easier to use, empowering a person who is aging in place to engage with family and healthcare providers.

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KEYWORDS

video chat; patient-physician interaction; age in place

This poster was presented at the Connected Health Symposium 2016, October 20-21, Boston, MA, United States. The poster is displayed as an image in [Figure 1](#) and as a PDF in [Multimedia Appendix 1](#).

Figure 1. Poster.



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Enhancing Video Chat Applications for Home Healthcare

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Introduction

Many seniors wish to "age in place". AARP® estimates 84%. Often, such people are remote from their families and healthcare providers.

Video chat via PC is a useful tool which can convey mood, physical status, activity level, therapeutic compliance, and state of surroundings.

Helps answer the simple important question: "Is this person OK?".

Video chat can help build constructive social bonds between patients and providers because communication is not "faceless".

Let's simplify the use of Skype® by naïve computer users, so they can see and hear family and healthcare providers.

We have built a system, consisting of a "helper" software program and a USB keypad which operates with a PC running Skype®.

Sit in front of the computer and press one button to connect.

Users

Computer users >65 years old, benefit from simplification of control. Computer tasks can be daunting: less familiarity.

Mice, screens, and keyboards are barriers to users with reduced visual acuity and manual dexterity.

System: "Hello Grandma!™"

- Only one button-press required to call specific family members or friends, healthcare providers or services.
- Low-cost USB add-on to camera enabled PC or laptop.
- Helper program, simplifies installation by a more experienced user, assigns specific Skype® contacts to specific buttons.
- Press an assigned button to call a specific person. To end, press "hangup" button. To receive calls from others, press "answer" button.




Evaluation

Population: N=17, Age range 57-97. Average age 76, 9 F, 8 M.



"Hello Grandma!™" USB keypad connected to a laptop running Skype. Three smartphones running Skype® in room, "Daughter", "Son", and "Visiting Nurse". Participants were asked to "make a call".

Results

All users successful in making a call < 30 seconds.
All users successful in hanging up a call.
14 users said they would be more likely to make a video call using system.
Users expressed satisfaction with simpler interface.
Positive comments from Visiting Nurses.

Conclusions

System simplifies interface and facilitates use of Skype®.
Users enjoy simplification.
"Hello Grandma!™" can increase social and visual connectivity thus benefitting users and those who care for them.

Multimedia Appendix 1

Poster.

[\[PDF File \(Adobe PDF File\), 1018KB-Multimedia Appendix 1\]](#)

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