

Title:

Telehealth Supportive Counseling Program for Older Adults

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### **Abstract**

This paper describes the results of a telemedicine intervention designed to assist older adults dealing with symptoms of depression to better cope with their circumstances. A total of 31 participants were initially recruited to take part in a 10 week program in which participants received counseling services for depression using a web-based videoconferencing software. Twenty-one participants completed at least 6 sessions and there are clear changes in depression level as measured by the PHQ-9 comparing the pre-test and post-test. Respondents felt the videoconferencing system met most of their needs.

## Introduction

Access to mental health services could be improved through telehealth. Technology has advanced to the point where video telecommunication can create a more rich and personalized experience than the telephone alone, and works reliably most of the time. A series of studies have been published over the last 15 years that support the idea that telehealth may even have advantages over standard in-person care. Among the advantages are: lower costs associated with providing care (e.g., less transportation), less time spent waiting, and less exposure to nosocomial infections (Dunn et al., 2000). While the media often focuses on telehealth as a solution for rural environments, older adults have been targeted as potential consumers of telemedicine as one of the groups with the highest rates of health care utilization (Poon et al. 2005).

One of the early studies using video telehealth looked at 8 participants with panic disorder (Bouchard et al. 2000). They found significant pre- to post-treatment improvements on outcome measures that included self-efficacy, disability, and panic and agoraphobia scale scores. Feedback from participants revealed that the Telehealth procedures were accepted by the participants. Cognitive Behavioral Therapy has been used in other interventions for panic disorder (Cowain 2001), social phobia (Pelletier 2003), and for obsessive compulsive disorder (Himle et al.2006). A larger study, also by Bouchard et al. (2004) investigated the reactions of 21 participants with panic disorder, though only 11 received telehealth treatment while 10 received the control intervention of in-person counseling. In this case, both those receiving in-person as well as virtual telehealth treatment demonstrated significant pre- to post-treatment improvements in measures of anxiety, depression, panic and impairment. Interestingly, telehealth participants reported slightly larger reductions in panic frequency than in-person participants.

Another landmark study was completed by Griffiths, Blignault, & Yellowlees in 2006. In their study of Cognitive Behavioral Therapy for participants with depression and/or anxiety disorders via telehealth, they offered treatment to 15 participants, including six patients with major depressive disorder, three with generalized anxiety disorder, three with panic disorder, and three with mixed anxiety and depressive disorder. Their treatment was 6 to 8 sessions held via video telehealth to a remote clinic, though in-person case managers could be asked to provide emotional support after any treatment session. Participants showed significant pre- to post-treatment improvements in symptoms of anxiety and depression. Both participants and providers reported acceptance of telehealth procedures with only a few technical glitches that could be resolved over the telephone. Further benefits of telehealth counseling services for mental health disorders were reviewed in detail by Richardson (2009).

Behavioral change can be achieved through telehealth as seen in studies that have investigated telehealth and smoking cessation (Carlson et al., 2010), alcohol addiction (Freuh et al., 2005), posttraumatic stress disorder (Freuh et al., 2007), and suicide

assessment (Godleski et al., 2008). While one might think people might prefer in-person discussions to video teleconference, studies that have compared both modalities have found that respondents do not have a strong preference for in-person or online (Himle et al, 2012).

The current study is unique in its focus on older adults living in an urban community in dense housing units. Older adults are generally less curious about novel technologies than their younger counterparts, and thus one might think older adults would be less inclined to try telehealth counseling. The current study investigates whether online counseling can be efficacious for older adults dealing with both mental strains as well as common physical limitations associated with aging. Furthermore, this technology is relatively novel to the study participants, and we are curious about their comfort with the technology.

## **Methods**

### **Design**

The initial recruitment strategy targeted dozens of individuals living in affordable housing communities in Los Angeles or participating in activities at a local senior service agency. An advertisement for free counseling sessions was posted in 3 different housing communities, and those who showed interest were told the intervention would help them deal with stress and anxiety. Those who were interested completed a pre-test survey and received an assessment by a licensed clinical social worker in order to assess whether they might benefit from counseling.

The initial sample consisted of 31 willing participants, however after the first counseling session 10 people decided they did not want to continue. Among those who did not complete all sessions, the most common reason cited was a medical/health issue that interfered with their ability to keep their scheduled counseling sessions. The next most common issue cited (n=4) was a misunderstanding of the intervention (n=2) and a scheduling conflict (n=2). One participant cited discomfort for the technology and a preference for face-to-face counseling, while one had cognitive limitations that made the intervention too difficult to implement effectively (see Figure 1). The characteristics of the 21 remaining respondents are shown in Table 1. The sample was highly diverse including multiple ethnicities (Hispanic, Black, Korean and Filipino), languages (English, Spanish and Korean) and a wide spectrum of ages, though mostly composed of people in their 60's, 70's and 80's. The telemedicine study aimed to capture feedback from a range of older adults experiencing symptoms of depression. Not everyone recruited reported enough self-reported depression symptoms to count as depressed by the cut-points of the PHQ-9 scale at baseline, though they expressed a willingness to participate in order to resolve some aspects of stress in their lives

### **Analysis**

The data were structured with before and after results matched across participants so standard tests of significance including chi square for nominal variables and t-tests for ordinal variables were employed to test for the significance of change

between the pretest and posttest. In some cases, the difference between the posttest and the pretest was calculated and graphed as a way to categorize the size of a change over the course of the intervention.

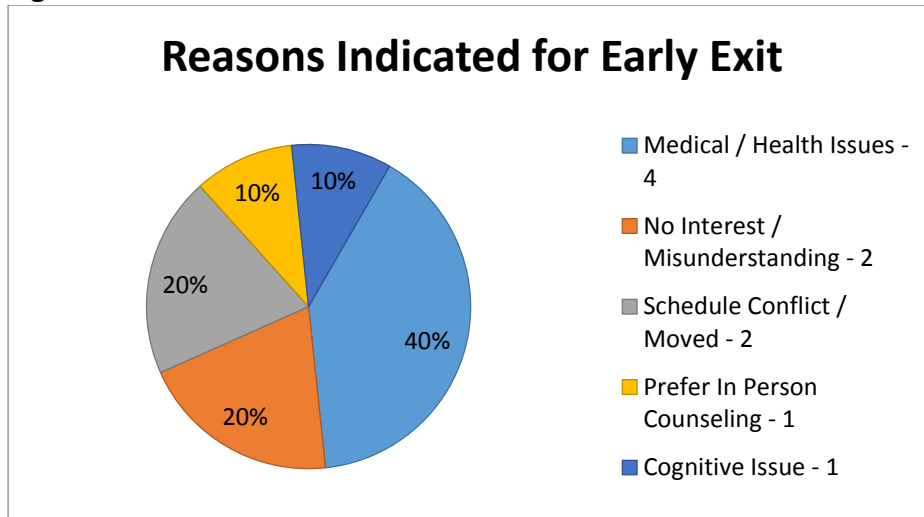
## Results

Table 1 summarizes the characteristics of the initial recruitment sample. The data show that most participants were older than 65, represented minority ethnic groups, including 55% Black, 23% Filipino, and 19% Korean. Among those who completed the intervention, most had high school or less as their level of education, while a quarter of participants report they had a bachelor’s degree.

**Table 1: Characteristics of Sample: 21 Participants**

	N	%
55-64	3	14.3%
65-74	11	52.4%
75-84	4	19.0%
85+	3	14.3%
Female	17	81.0%
Male	4	19.0%
Hispanic	2	9.5%
Non-Hispanic	19	90.5%
Black or African American	7	33.3%
Filipino	6	28.6%
Korean	5	23.8%
Latino	2	9.5%
Other Asian or Pacific Islander	1	4.8%

**Figure 1.**



While respondents considered themselves to be healthy, as older adults many had underlying chronic conditions which may have contributed to their desire to receive counseling. Just over one third of the sample had diabetes, a third had poor vision, and 1 in 5 had a stroke that may have affected their quality of life.

**Table 2. Self-reported health issues:**

	N	%
Poor Vision	10	32%
Heart Disease	8	26%
Stroke	6	19%
Diabetes	11	35%
Kidney Disease	3	10%
Hearing Loss	5	16%
High Blood Pressure (Hypertension)	17	55%
Chronic Obstructive Pulmonary Disease	3	10%
Parkinson's Disease	1	3%
Cancer	2	6%

### Health Care Utilization

Despite the relative good health among study participants, primary care utilization in the last 3 months was high among sample participants, with nearly all of the baseline participants having a recent doctor visit (87%), while only 1 in 5 spent one night in the hospital in the last year. The post-test data looked at utilization of care since their first counseling session, and found continued primary care utilization after 2 months of counseling service. This is actually a positive result given all sample participant have

serious life stress that lead to their willingness to participate in this survey, and effective stress and health management can prevent more expensive tertiary care.

**Table 3. Change in Health Care utilization**

	3 months before	2 months after
Hospital inpatient	19%	10%
Doctor	87%	57%
Prior Counselling	16%	

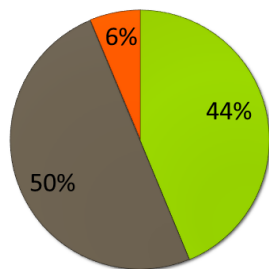
### Quality of Life

One of the primary objectives of the intervention was to improve quality of life. A series of questions was used to assess quality of life and generally found that more participants experienced improvement than worsened when comparing the initial and final surveys. For example, in response to the question “How would you rate your quality of life?” at the baseline survey 68% reported good, 22% neither good nor poor, and 10% very good. The average of this 5 point scale, with higher numbers corresponding to better quality of life, was 3.9 at the pretest and 4.19 at the post-test. While the difference is not statistically significant, at post-test 9 improved, reporting better score, while 4 got worse, and 8 were the same.

**Figure 3.**

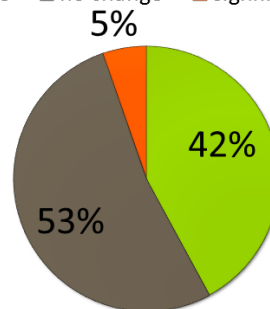
#### Change in self-rated quality of life

■ improve ■ no change ■ significant decline



#### Change in negative feelings such as blue mood, despair, anxiety, depression

■ improve ■ no change ■ significant decline



In response to the question “How often do you have negative feelings such as blue mood, despair, anxiety, depression?” the average score was 3.7 in the pretest and 4.1 in the post-test. Looking at the results in more detail, the responses at baseline were 3% Always (have feelings such as blue mood, despair, anxiety, depression), 6% Very Often, 23% Quite Often, 52% Seldom, 16% Never,. When we compare this with the post-test we find that 8 improved, 3 got worse, and 10 reported the same response.

In response to: “Would you say your health in general is Excellent, Very good, Good, Fair or Poor?” At baseline: 3% reported Excellent, 16% Very Good, 45% Good, 33% Fair, 3% Poor. On a 5-point scale, where lower scores are better, the pre-test average

was 3.52, with post-test average 2.81

### Physical Functioning

There was no significant change in physical functioning ability after the counseling sessions. Below is a table showing responses to physical functioning questions at baseline. Most participants reported no difficulty with any of the activities of daily living or instrumental activities of daily living in the survey. Where there was difficulty, the most often found form of disability was walking within the home and light housework.

**Table 4.**

	No difficulty	Some difficulty	Much difficulty	Unable to perform
Bathe or shower	80.6%	12.9%	6.5%	
Dress yourself	74.2%	19.4%	6.5%	
Eat	83.9%	16.1%		
Walk within home	67.7%	32.3%		
Get in and out of bed	74.2%	19.4%	3.2%	3.2%
Use toilet	87.1%	12.9%		
Light housework	61.3%	19.4%	3.2%	16.1%
Take medications	80.6%	19.4%		
Manage money	93.5%	6.5%		
Shop for groceries	64.5%	16.1%	6.5%	12.9%

### Depression

While 83% of the respondents in the final sample had never received mental health services before, 71% of them (15 of 21) reported some level of depression according to the PHQ-9 survey. About half showed improvement in their level of depression, while about a quarter didn't change, and a quarter appeared to have worse PHQ-9 scores at post-test, though most of these we're likely made more aware of their mental health state as a result of the counseling, and may have been in denial at pre-test. Table 5 illustrates depression category change as measured by the PHQ-9, and a graph which shows actual PHQ-9 scores before and after the counseling sessions?

**Table 5.**

<b>moderately severe to lower level</b>	1	5%
<b>moderately to lower level</b>	5	24%
<b>mild to minimal</b>	5	24%
<b>Improve</b>	<b>11</b>	<b>52%</b>
<b>minimal to higher level</b>	4	19%
<b>mild to higher</b>	1	5%
<b>Worsen</b>	<b>5</b>	<b>24%</b>
<b>No change</b>	<b>5</b>	<b>24%</b>
<b>Total</b>	<b>21</b>	<b>100%</b>



Figure 4. PHQ-9 scores at pretest and posttest

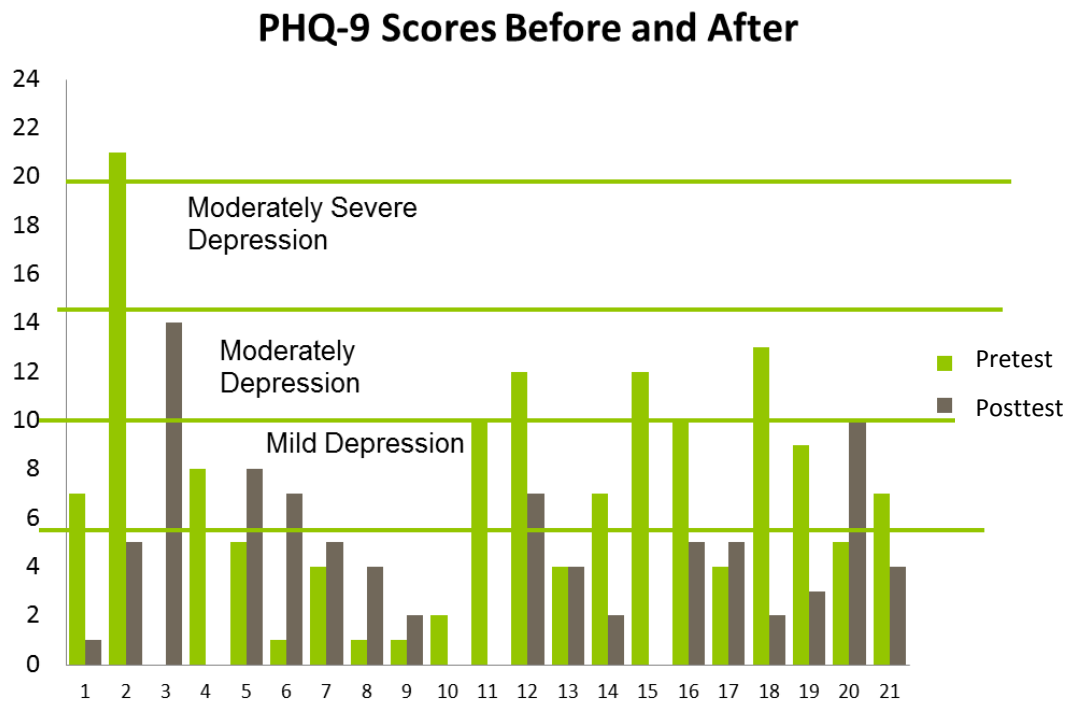


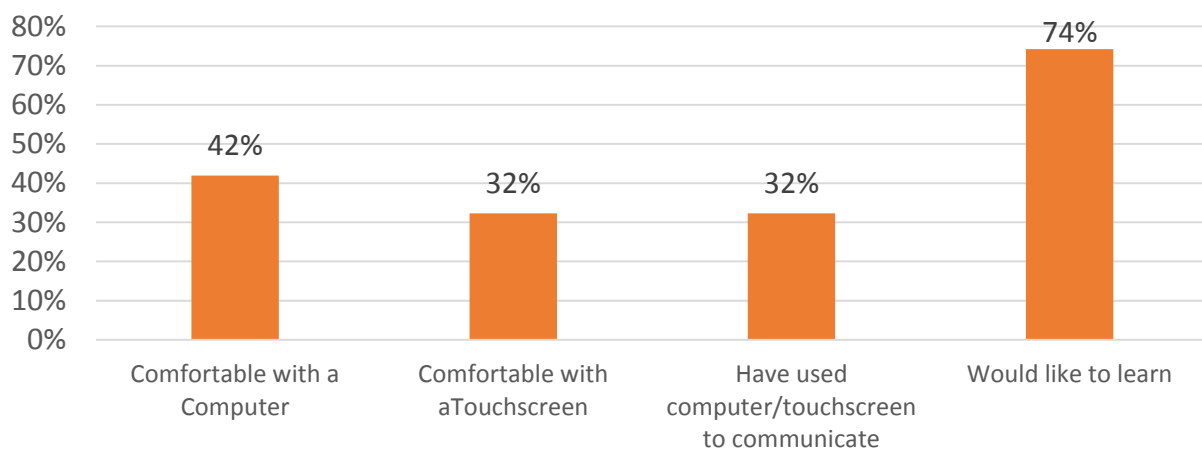
Table 6 shows the qualitative responses focused on participants' general impression of the program. When asked about participants' overall satisfaction with the program, responses were overwhelmingly positive, with the majority, a full 67% saying they preferred the virtual counselor over a face to face encounter. There still remain 43% who think they might have preferred speaking to someone in person (Table 6, question 7), however, as other responses show, the majority felt comfortable with the technology, despite the fact it was very new to them. Only 19% reported any discomfort with talking about their issues with the counselor (question 5). Despite the barriers some felt, a full 95% reported the counseling sessions help to address emotional and mental issues (question 1), and 9 in 10 reported the counseling session was easy to use. Finally, most (71%) agreed that online counseling was just as good as seeing a counselor in the office (question 10), and nearly all (86%) would recommend online counseling to others (question 11).

**Table 6: General impressions of telemedicine at post-test**

1. The counseling sessions help to address my emotional and mental issues	95%	Yes
2. The online counseling program was easy to use	90%	Yes
3. After using the counseling service I feel a sense of relief	95%	Yes
4. The counseling service affected my interest in my physical health	86%	Yes
5. I was uncomfortable talking to the counselor	81%	No
6. I was uncomfortable using the online counseling technology	67%	No
7. I would have preferred speaking to someone in person	57%	No
8. I worried about my privacy with online counseling	90%	No
9. I felt more open to share my experiences online than in person	67%	Yes
10. The counseling I received online was just as good as going to see a counselor in an office	71%	Yes
11. I would recommend online counseling to others	86%	Yes

Comfort with technology is a critical component of effective implementation of telemedicine, and interestingly, most participants were not comfortable with common technologies used in telemedicine. Only 42% reported they were comfortable with using a computer, while 32% were comfortable with a touchscreen. The same percentage (32%) have used a touchscreen to communicate before, while most (74%) would like to learn more about how to use technology effectively.

**Figure 5. Comfort with Technology**



## Conclusion

The “Model eHealth Community for Aging” Telemental Health pilot delivered accessible mental health services through video conferencing and iPad to underserved older adults facing barriers such as Decreased mobility, stigma of mental illness and socio-economic and cultural/linguistic challenges. It effectively served 21 of the 31 participants initially recruited, and is demonstrated that many older adults are accepting of the idea of receiving counseling over the internet. This is a radically different form of communication that is significantly different from the familiarity of in person interaction or the anonymity of a telephone interaction. The ability to see each other influences the power of non-verbal communication and creates a sense of connection, while the opportunity to be physically alone in a familiar place can offer a sense of comfort and ease that might alter an individuals’ willingness to divulge facts and experiences that might be the source of embarrassment or anxiety. Some of the most important information about the quality of the interaction between the participants and the counselors is known only to those two parties and the survey results reveal only small clues about the true potential benefits experienced by the participants.

The small sample size and broad diversity of the participants make it difficult to find statistically significant effects, yet we know through their assessment of the program that most thought the experience was good enough to recommend to a friend and may have helped them address issues in their lives. We can clearly see more people experienced a reduction in depression than an increase in their PHQ-9 score, and yet even those with higher PHQ-9 scores at post-test could be examples of success as they may have been unwilling to admit their symptom honestly, or perhaps in denial of their true feelings, which came to light as they talked them out with a counselor.

This study brought both counselors and a group of older adults to a new understanding of the challenges that may face future clinicians who are likely to provide an increasing amount of their services over the internet in some fashion. There are barriers to the acceptance of the concept on both the patient and the provider, challenges in making the software user friendly, and in eliciting all of the rapport needed for a high quality clinical session. This study revealed that it is possible in concept, though expectations should be modest until further experiments reveal the factors associated with successful teleconference interventions.

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