



“EXERCISING FREQUENTLY AND EATING PROPERLY HAS HELPED IMMENSELY”: BENEFITS OF AN ONLINE CHRONIC DISEASE SELF-MANAGEMENT WORKSHOP FOR LOW-INCOME HOMEBOUND OLDER ADULTS

S. An, N.G. Choi

Abstract: *Background:* Low-income homebound older adults need chronic disease self-management knowledge and skills to cope with their multiple medical conditions. *Objectives:* This study explored low-income homebound older adults' experience, described in their own words, of online chronic disease self-management workshop. *Design and setting:* Twenty recipients (aged 62+ years) of a home-delivered meals (HDM) program in a central Texas city participated in a feasibility study. *Measures:* Sources of data were the deidentified bulletin board posts written by each participant and transcripts from two focus groups with the participants, conducted 5-8 weeks after completion of the BCBH workshop. *Results:* Two most important mechanisms of change that the participants adopted were exercise and healthy eating. They have also increased their knowledge of chronic disease and benefited from interactions with other participants. *Conclusion:* This study underscores the importance of reaching these older adults to help them get into such a program.

Key words: Homebound older adults, chronic disease self-management, exercise, healthy eating.

Introduction

A growing number of homebound older adults face many obstacles to coping with their multiple chronic diseases and activity limitations. Healthcare spending often doubles for these older adults (1, 2). However, busy healthcare providers often do not impart the knowledge and skills these older adults need to self-manage their health and functioning. The burden of day-to-day disease management becomes the responsibility of the patients and their informal caregivers. Without effective chronic disease self-management, homebound older adults are at risk for further social isolation and disability, which also often create a downward spiraling effect on their emotional well-being, leading to depression, anxiety, and other psychiatric problems (3).

According to the Chronic Care Model, effective self-management support is essential to enable patients and their families to effectively cope with the challenges of living with chronic diseases (4). The 6-week, face-to-face Chronic Disease Self-Management Program (CDSMP) is

an evidence-based patient self-management workshop facilitated by trained peer leaders in a small group setting (5-8). Better Choices, Better Health (BCBH), the CDSMP's online version managed by the National Council on Aging (NCOA), which allows participation through a password-protected, dedicated website, has also been found to be effective (9). Through logging in for a total of 2-3 hours per week for 6 weeks, 20-25 BCBH "workshop" participants form an online community, with guidance from a pair of trained peer facilitators. Participants can improve self-management knowledge and skills by reading the week's content in the site's Learning Center; they do action planning, deal with difficult emotions, solve problems, and have celebrations using interactive bulletin boards in the Discussion Center; they can set goals, journal, monitor their exercise, keep medication records, and take breaks in the Relaxation Zone, all in the confidential My Tools section; and they can participate in email exchanges with other workshop participants through the Post Office (10).

Better Choices, Better Health has great potential for homebound older adults as they do not have to leave home to participate in the workshop. However, BCBH has largely eschewed low-income homebound older adults who lack computer literacy. Recently, we

University of Texas at Austin, USA

Corresponding Author: Namkee G. Choi, The University of Texas at Austin School of Social Work, 1925 San Jacinto Blvd, D3500, Austin, TX 78712-0358; nchoi@austin.utexas.edu; 512-232-9590; Fax 512-471-9600.

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completed a feasibility study of BCBH participation among 20 low-income homebound older adults, including 10 who needed computer training (11). The 4-week post-BCBH follow-up found extremely positive outcomes in dealing with health-related distress, mastering skills, exercising, going about daily activities, and managing disease, regardless of initial computer literacy level. In this study, we present (1) the contents of the participants' posts in the BCBH Discussion Center's weekly action planning, difficult emotions, problem-solving, and celebrations bulletin boards; and (2) the focus group discussions in which the participants shared their perspectives on the benefits of BCBH. This exploration of low-income homebound older adults' experience, described in their own words, was intended to improve our understanding of the ways in which BCBH helped them learn chronic disease self-management knowledge and skills.

Methods

Participants

The participants ($n = 20$, aged 62+ years) were recipients of a home-delivered meals (HDM) program in a large city in central Texas. The inclusion criteria for participation were (1) ability to read and type and (2) absence of cognitive impairment. A detailed description of recruitment steps is provided elsewhere (11). The study was approved by the authors' institutional review board. Table 1 shows sample characteristics.

Data Collection

Data came from two sources: (1) all the deidentified bulletin board posts (i.e., those that did not include responses to other participants' posts or messages) written by each participant, which were extracted by the NCOA staff; and (2) transcripts from two focus groups with 13 of the participants, conducted 5-8 weeks after completion of the BCBH workshop. The subjects of the focus group questions were computer skills training experience; overall workshop experience; and self-perceived gains. Five participants who did not participate in a focus group in person provided their responses to the questions and comments in writing.

Data Analysis

Analysis of the participants' posts was organized by the total number of posts, the subject headings that the writers provided (e.g., "Frustration"), and the contents/comments under those headings. We closely followed the participants' choices of subject headings. Since the subject headings in the problem-solving board were quite varied, the two authors jointly read/re-read

all the posts, identified common threads, and grouped them into overarching subject headings. Unique posts are presented as well.

The authors content-analyzed the focus group transcripts and written responses provided by the participants, using qualitative analysis steps described by Creswell (12). We then independently read and identified significant statements and emergent themes, agreed on four themes, and identified participants' quotes that would best represent the themes.

Results

Participants' Online Posts

Weekly Action Plans

Only 3 participants failed to post their action plan once, resulting in 117 posts and 125 action plans for analysis (8 participants posted double action plans, e.g., walking around the house and eating healthily). The most frequently posted action plans were doing exercise (by 18 participants) and eating healthy/balanced meals (by 13 participants; see Table 2). Of the two participants who did not choose exercise as an action plan, one could not, due to her recent back surgery, and the other substituted household work (doing laundry and folding towels/sheets) for exercise.

Table 1
Participant characteristics

N = 20	M \pm SD or n (%)
Age (yr), range 62-86	70.30 \pm 6.54
Age group (n, %)	
62-70	12 (60.0)
71-80	6 (30.0)
81+	2 (10.0)
Gender (n, %)	
Female	17 (85.0)
Male	3 (15.0)
Race/ethnicity (n, %)	
Non-Hispanic White	7 (35.0)
Black	6 (30.0)
Hispanic	5 (25.0)
Native American	1 (5.0)
Asian American	1 (5.0)
Marital status (n, %)	
Married	2 (10.0)
Widowed	7 (35.0)
Divorced/separated	9 (45.0)
Never married	2 (10.0)
Education (yr), range GED-18	13.70 \pm 2.15
No. of chronic medical conditions	4.30 \pm 1.67
Type of BCBH workshop participated in (n, %)	
General	2 (10.0)
Arthritis	9 (45.0)
Diabetes	9 (45.0)





Table 2
Action plans (n = 125)

Subject	Frequency, n (%)	Content
Exercise	73 (58)	Walking in and around the house/apartment complex, through apartment hallways, to driveway, around a chair; treadmill; yoga; exercise at YMCA; flexibility exercise/stretching/Thera-Band; joint exercise; riding exercise bicycle
Eating healthy, balanced meals	26 (21)	More fruit intake; eating breakfast; eating at least three meals per day; low sodium intake; small portions; preparing meals in advance; and going to a grocery to buy healthy food (rather than relying on others, who brought in unhealthy food); making a grocery shopping list for family to promote healthful eating
Regular glucose testing and medication adherence	6 (5)	Testing glucose; taking medication daily
Decreasing social isolation and maintaining good relationships	4 (3)	Calling and visiting friends; saying positive things
Doing household chores	3 (2)	Housecleaning; doing and folding laundry; going to the post office (with transportation help)
Other	10 (8)	Keeping doctors' appointments; better pain management through breathing and practicing guided imagery; arts and crafts; increasing self-discipline; setting boundaries (without further elaboration); keeping up with BCBH participation; keeping up with new lifestyle learned from the workshop

Of the posted action plans, 69 (59%) were completed; 29 (24.8%) were partially complete/incomplete (i.e., "did only on 3 days," "walked only half a mile, not a mile"); and 16 (13.7%) did not contain completion status (most of them were during the last week of the BCBH workshop, and the participants may not have entered the completion status as the workshop was nearing the end). The most frequently stated reasons for partial completion/incompletion (n = 22) was poor health due to acute sickness, elevated pain, flared-up edema, and feeling too tired/fatigued to exercise or prepare meals. The rest were lack of motivation (n = 3; "I just did not feel up to it") and unexpected events (n = 4, including urgent doctor's appointment and illness in the family).

Completion remarks reflected pride and joy: "I can't believe I did it, but I did—consistently, for the whole week!" "Action plan has helped me overcome a lot of my bad habits." "I am now more aware of the times that I monitored my blood sugar levels and am quite pleased with myself for having excelled beyond the call of duty. I have not felt this good in 15 years, lost some weight, too. Amen." "I thank God for this blessed day ... walking, reading, eating right to be able to control my pain every day. I feel normal. Thank you, BCBH."

Difficult Emotions

Eighteen participants made 21 posts in the difficult emotions board. The most common subject (n = 13 of 21 posts) was "frustration" stemming from their illnesses, pain, and disabilities and associated fear of the future:

- I am dealing with pain and tiredness almost every day because of fibromyalgia. I am tired of all the meds to take and their side effects.

- My severe neuropathy causes painful flare-ups with most of my physical activities.
- I feel frustrated because I can't keep up with my housework or gardening: low energy. I am fearful about my future; it seems that I won't be able to get past my illness to make it to happiness. I get frustrated about my weepiness. My eyes are always leaking lately. It's embarrassing. Others don't know how I feel—I do. I live with chronic illnesses, including my diabetes.

The other posts were about their physical conditions and lack of motivation that interfere with their desire to exercise (n = 4); relationship stress (n = 2); and grief over death of a friend (n = 1); and anxiety about attaining the new goals that the participant set for herself (n = 1).

Problem Solving

All 20 participants posted on this board, a total of 70 posts, with 12 posts that described their own solutions or suggestions for others; 57 that concerned problems they were experiencing, and one with unclear content (see Table 3). One participant who wrote about healthy eating when dealing with chronic pain shared her conscious efforts to plan and prepare meals ahead of time, when she felt a bit better ("Planning ahead is my best solution"), and to drink one Glucerna (diabetic nutritional drink) every day as a lunch or snack. Another participant wrote that "sometimes I also got lazy and did not want to do my exercise, but I did because it made me feel so good." One participant shared her thoughts/advice about depression care—that "one needs to keep trying a combination of treatments that fit one's personal style to help him/her feel better."



Table 3
Problem solving (n = 70)

Category, n (%)	Subject	n
Description of participants' own solutions or suggestions for others 12 (17.1)	Pain management	n = 3
	Exercise	n = 3
	Healthy eating	n = 3
	Cane use to increase mobility	n = 1
	Depression care	n = 1
Problems that participants faced 57 (81.4)	Helpfulness of the BCBH reference book	n = 1
	Pain, fatigue, edema, neuropathy, and other health problems	n = 24
	Barriers to healthy eating	n = 11
	Difficulty in communicating with family, neighbors, and friends	n = 5
	Medicare coverage, lack of dental insurance for teeth broken due to diabetes, and healthcare provider issues	n = 4
	Fear of living alone due to lack of family and to end-of-life care issues	n = 4
	Depression/ lack of motivation/ overthinking, and not taking actions	n = 3
	Lack of transportation	n = 1
	Time management	n = 2
	Caregiver (home health aide) problem	n = 2
Unclear content 1 (1.4)	Housework problem	n = 1
		n = 1

Posts about health problems covered illnesses (e.g., chronic obstructive pulmonary disease [COPD], fibromyalgia), pain, fatigue, and mobility restrictions. Most barriers to healthy eating were also related to pain in the lower body that made it difficult for the participants to cook while standing and their inability to get to a grocery store: "I don't drive, and now I can't walk much." The others were lack of self-control in food intake and family/friends'/aides' lack of cooperation (i.e., bringing sugary desserts). Posts about communication problems with family tended to be vague: "I am afraid to bring up what is really on my mind, as my son will be upset." But one participant wrote: "I have no family. I just can't ask neighbors or others for help with my problems. I feel they have their own life and its problems to deal with. I don't know how to overcome this thinking."

Celebrations

Twenty participants made a total of 26 posts on this board, about new knowledge and skills that they had learned through the workshop and about their improved physical and mental health.

- I have learned how to work with my personal health. Exercising frequently and eating properly has helped immensely.
- When I started [the workshop], I could not walk to my front door without becoming short of breath. Now, I have built my strength up and can walk to my front door and walk down the sidewalk and back.
- I could improve my blood sugar readings with some effort and watch my weight, feeling happier than before starting. Thank you all.
- Glucose recording is now established; am eating

healthy breakfasts and beginning to count daily calories and have a daily/weekly exercise regimen. [These changes] are astonishing ... being active ... living more every day.

- Have learned to solve my troubles, emotions, using the basic tools and techniques that will allow me to better deal with the ups-downs of having diabetes.

Themes from Focus Groups

Theme 1: Computer Training: Sense of Achievement and Loving It

The participants were very proud of having completed the workshop, and they expressed feelings of achievement and much improved confidence about using the computer/Internet:

- First, I was afraid of the computer. Once we tackled a few problems and solved them, it was entertaining to me.
- It was confusing and frustrating because I did not know. With little practice, with help, I started enjoying it.
- First, I was not able to communicate with the other participants, and then I was able to. I did not know how to answer. After I learned, I could easily answer and write to other participants. It was real easy at the end.



Theme 2: Self-Management Skills Improvement Through Increased Knowledge of Disease, Exercise, and Healthy Eating

Participants unanimously reported improved knowledge about their disease and health behavior changes that resulted from their workshop participation. One participant said:

Before the workshop, I did not understand a lot of medical information. After the workshop, I understand a lot. Maybe I did not pay attention. I recognized I was not doing the right thing because I was not informed correctly. Doctors just tell you in 30 minutes. But the workshop shows you step by step. In the Discussion Center, you can ask and learn.

The participants stated that their self-management skills also improved tremendously because they adopted exercise routines, healthy eating habits, and regular monitoring of blood sugar levels in the case of diabetes. They described the way they had followed their action plans by starting simple exercises, such as walking inside, increasing the time and scope of their exercise, and paying attention to what and when they ate. One said: "I changed my cereal to sugar free and high fiber. I did not try that before, but I realized that I had to. I am doing stretch exercise ... very helpful." Another said: "I actually learned how to be more structured, stay with my goals of exercise and eating. In two weeks, I was down to 1,000 milligrams of Metformin from 2,000 because I did exercise a lot." Another said: "I don't have depression any more. Pain was low, about 3 [on a 10-point scale]."

Theme 3: Benefits of Interaction with Other Participants

All participants stated that they had benefited from the interactions with the other participants, via the Discussion Center and the Post Office. The interactions afforded feelings of connectedness with others who had similar chronic conditions and the opportunity for mutual encouragement, support, and information exchange:

- It's easier when you know all the people have problems with the same discomfort and when they are doing it with you. You can take their suggestions, apply them to yourself, and take the best of what you learn.
- Interacting with others who have the same problem is very therapeutic. It elevated my confidence.
- I felt joyful with them. It made me feel good that they valued me. I helped them solve problems. That was good and empowered me. One participant responded [to my post], "That is a good suggestion." Then, I provided more suggestions and had more communications with others.

Theme 4: Positive Attitude and Confidence

All participants also emphasized that the workshop was responsible for the positive turn in their overall attitude and outlook on life. One participant said:

I appreciate it [BCBH] very much because it opened my eyes to see that I could look at my situation through different eyes. I was able to see how others had the same conditions that I had. I was able to notice the attitudes that they had, notice their positive ways of thinking. And it gave me a positive way of looking at my condition. It helped me to want to understand it fully so I can better myself and not be depressed because of the condition that I have.

Another talked about increased confidence: "I think that perhaps the most beneficial part for me is regaining my sense of self and my ability to take care of myself." Another said: "I had felt out of control ever since being diagnosed with diabetes. ... This workshop bolstered my confidence little by little, while the others cheered me on to tiny victories, increasing to major ones."

More than half of the participants (13/20) reported that their family, doctor, and neighbors had noticed their changes. One participant said: "My grandkids notice my change. I can play more with them. I have more energy. One grandson said, 'Nana, I did not know you could do that.'" Another participant said: "A [special transit] bus driver noticed my change, 'You did not really talk before. You just looked out the window; now you talk friendly to everybody.' I am happier, and the only difference is the workshop." One participant (age 86) described her doctor's surprise: "When I went to my doctor, he said, 'How'd you do all this? You are in the best health in 6 years!' and I just told him about BCBH ... I felt real powerful!" She also said that her minister had visited her and seen her participating in BCBH. He was so impressed [she previously had no computer skills] that he asked her to stand in front of the congregation the following Sunday and describe BCBH and gave her the charge to call all senior members of the church to sign up for BCBH. She said further: "I was homebound, but I don't feel I am homebound any more. I can walk to the bus stop if I want. It has been a long time since I have had confidence to do that. I have regained my control."

Discussion

This paper provides an insight into the ways in which low-income homebound older adults benefited from the workshop. Although most participants with no/limited computer skills expressed computer anxiety before/at the beginning of the workshop, they reported improved confidence as the workshop progressed, which is consistent with a previous study of older adults' computer learning (13). The participants' experience of





the workshop was unanimously positive. With increased knowledge, implementation of weekly action plans, and mutual support and encouragement from the facilitators and other participants, the online workshop empowered them in ways that they had not previously experienced. Changes through modeling, sense of connectedness, social persuasion, and self-realization (5) were not only effective but also enjoyable for the low-income homebound, mostly socially isolated older adults.

Two most important mechanisms of change that the participants adopted were exercise and healthy eating. A previous study found beneficial effects of various forms of exercise on homebound/frail older adults in reducing their risk of falling and fracturing bones and in improving their ability to live independently, with improvement seen in as little as 5 weeks, with the very frail and very old potentially benefiting the most (14). Another study also found that healthful eating is important for optimal diabetes self-care, especially among low-income homebound older adults, who tend to suffer from food insufficiency (15).

The study's limitations include the small sample size, gender imbalance, and the unknown long-term effect of the workshop. Given the precarious health status of homebound older adults, exercise and healthy eating routines are especially important. However, a longer-term follow-up is needed to examine maintenance effects. Despite these limitations, this study shows great potential for low-income homebound older adults to benefit from an online program and underscores the importance of reaching these older adults to help them get into such a program.

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