The Canadian Centre for Activity and Aging's Home Support Exercise Program

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"Homeboundness" is defined as never or almost never leaving one's home except for emergencies, not going beyond one's door without assistance, or going out of one's home less than once a month, and it is estimated to affect as much as 50% of the population who are 85+ years old.[1] The older homebound adult is more likely to live alone, have mobility limitations, experience incontinence problems, and be considered at high risk for falling and fear of falling, as well as more likely to receive home support services.[2] Frail seniors living at home are particularly difficult to reach and are at high risk for loss of functional independence and for institutionalization.[3]

Home exercise is an effective means to prevent falls, to maintain functional independence and to promote rehabilitation following injury or illness.[4] However, for an older adult faced with mobility challenges and/or other medical problems, attending a traditional community-based exercise program may not be a suitable option. Functional exercises performed at home can provide the older adult an opportunity to enhance and/or maintain their functional mobility and independence.[5] Several studies have reported on home-based exercise programs that target specific rehabilitation groups,[6] and home-based exercise has recently been described as a means of "prehabilitation" for the physically frail, community-living older adult.[7]

Home Support Exercise Program (HSEP)

The Canadian Centre for Activity and Aging (CCAA) developed the Home Support Exercise Program (HSEP) in collaboration with local home care agencies, educators, case managers and personal support workers (PSW) to target those older adults who may be considered homebound and at risk for significant functional decline. Early in the development of the HSEP, both the CCAA and the home care agencies agreed that the exercises needed to be simple yet effective, and should not require special equipment or impose significant time demands on the PSW. The HSEP consists of 10 simple, functional and progressive exercises that are to be done on a daily basis. The exercises consist of: (1) marching on the spot, progressing to walking from room to room; (2) wall push-ups; (3) lifting up on toes; (4) toe tapping; (5) seat walk; (6) getting up from a chair; (7) leg lifting; (8) reaching up and to the front and sides; (9) calf stretching; and (10) hamstring stretching (Figure 1). Participants exercise for two to five minutes and/or perform five to 15 repetitions, depending on the exercise. However, longer periods of marching on the spot or walking from room to room are encouraged after the participant becomes familiar with the program.

What makes the HSEP unique from other home exercise programs is its mode

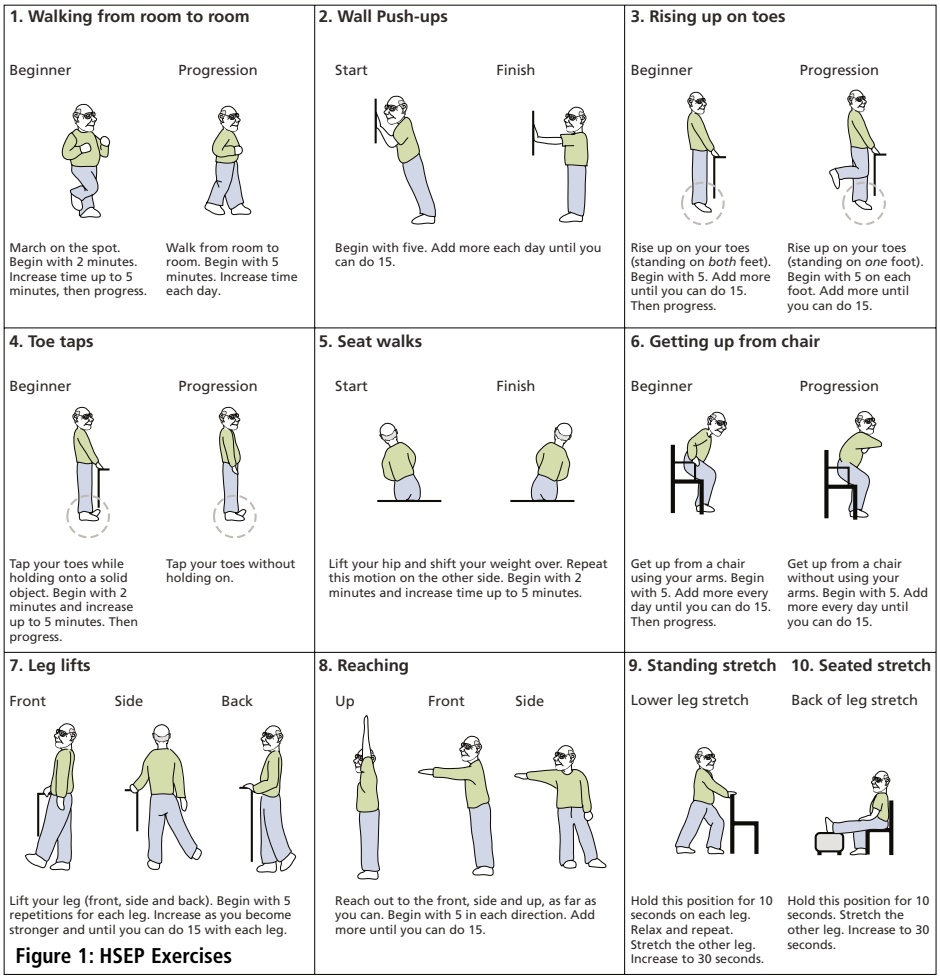


Figure 1: HSEP Exercises

of delivery via the existing home care infrastructure. In this model, the case manager determines if the client is appropriate for the HSEP. Once the client has given consent, the PSW introduces the HSEP gradually over a period of weeks, for a total of 60 minutes of instruction. The PSW continues to monitor their client's progress and to offer motivational support. Each participating client receives an illustrated exercise instruction booklet, recommendations on the intensity and frequency of exercises and an explanation of how to progress to each exercise. Home care clients also receive an illustrated calendar to monitor their progress and adherence to the program.

Training Personal Support Workers and Case Managers to Deliver HSEP

A four-hour education and training workshop teaches the PSW and other home care personnel how to safely and effectively implement the HSEP as part of regular home care services.

PSWs are taught how to illustrate the importance of physical activity for maintaining and enhancing function, explain the role of each exercise and possible contraindications, and develop skills in client monitoring and encouragement.[6] During the training workshop, PSWs view an educational video explaining the exercise program and the role of exercise to maintain functional independence. The video shows older adults at different levels of functional ability performing the exercises. The demonstrations of each exercise also include modifications to enhance progression. The PSWs receive instruction on client monitoring and motivational strategies to help encourage their clients to stick with the program.

Research Supporting the Benefits of HSEP

Forty frail older adults completed a four-month trial of the HSEP, while 37 matched controls received standard home care without the HSEP.[5] Those who participated in the HSEP self reported general improvements such as feeling better, being less stiff and stronger, and being able to walk easier after four months of participation. Specific improvements reported were more regular bowel movements and no difficulty to dry oneself. These improvements were supported by observations of the PSWs, who reported that their clients had reduced muscle/joint stiffness, improved leg strength, better transfer ability and greater independence in activities of daily living. The comparison group reported that they felt worse than they did four months previously. Between groups, significant differences were observed for mobility and walking scores, with an average improvement of 14–34% in the HSEP group compared to only minor improvement and/or functional declines in the controls (Figure 2). Significant improvements for balance confidence were also observed, as measured by the Activities-Specific Balance Confidence Scale (ABC),[8] the Falls Efficacy Scale (FES),[9] and a combination of the two. The HSEP group achieved improvements of 11.5%, 7.8% and 8.6%, respectively, whereas the non-HSEP group experienced little or no change in balance confidence.[5]

Economic Impact

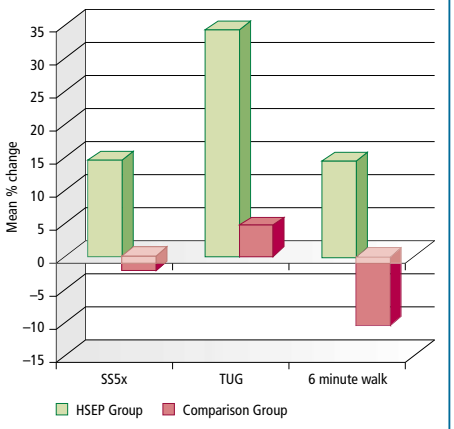
The HSEP provides a cost-effective continuation of other health care professional support services, including occupational and physiotherapies.[5] A recently published home exercise study involving 16 home visits by a physiotherapist for instruction and supervision was estimated to cost about $2,000 U.S. per participant.[10] Currently, the CCAA charges $75 per person for the basic, four-hour HSEP workshop, including the resource manual. When the PSW time and 60 minutes required to introduce one client to the HSEP are included, the total cost is approximately $150.

Resources

For further information regarding the HSEP, please visit www.uwo.ca/actage/new/home.htm. The HSEP video ($30), training package (includes video, resource manual, facilitator guide and picture package; $200) and additional resource manuals ($30 each) and facilitator guide ($40 each) can be purchased directly from the CCAA (Tel: (519) 661-1603). ◆

Figure 2

Physical Measurements After Four Month Trial of the HSEP



SS5x=Sit-to-stand 5 times; TUG=Time up and go test

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