



Published in final edited form as:

Geriatr Nurs. 2012 November ; 33(6): 439–445. doi:10.1016/j.gerinurse.2012.04.002.

Nursing Strategies for Promoting and Maintaining Function among Community-Living Older Adults: The CAPABLE Intervention

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Abstract

Although many programs aim to help older adults age in place, few target both the home environment and individual physical function. We present an inter-professional intervention called CAPABLE, *Community Aging in Place: Advancing Better Living for Elders*. CAPABLE's innovative approach incorporates a nurse, occupational therapist (OT) and handyman to address both individual and environmental factors that contribute to disability. The nurse component of CAPABLE addresses key barriers to functional independence such as pain, depression, strength and balance, medication management and poor communication with the primary care provider. This article focuses primarily on the nursing aspect of the intervention and how it inter-relates with the content and processes of the OT and handyman.

Introduction

The Institute of Medicine's Future of Nursing report¹, healthcare reform legislation, the current fiscal environment, and the burgeoning older adult population all provide a new policy environment for nursing practice. The concurrent focus on aging at home through community services rather than just within institutional settings means that large numbers of older adults will require home-based services to support this goal. This convergence of policy changes and healthcare needs for older adults requires that nurses develop and test new approaches to practice that enhance health.

The purpose of this article is to describe one such approach for promoting aging at home that is responsive to changes in policy and demographics. This is an inter-professional intervention called CAPABLE, *Community Aging in Place: Advancing Better Living for Elders*². CAPABLE is an intervention that addresses disability in older adults from both individual and environmental perspectives. The CAPABLE intervention includes a series of services that could be ordered through Medicare Part B, which an *Accountable Care Organization* could elect to cover, or states could offer to decrease the Medicaid budget by decreasing nursing home admissions. CAPABLE is for nurses and occupational therapists

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Disclaimers: None

that work with older adults and wish to decrease disability and, therefore risk of institutionalization, in this population.

First, we describe the need for CAPABLE and factors that informed the development of the intervention. Second, we describe the inter-professional nature of the intervention and how specific roles function. We use a case example to exemplify CAPABLE and describe the implementation of specific evidence-based interventions. This article primarily focuses on the nursing aspect of the intervention. Feasibility and outcomes have been described in detail elsewhere².

Need for CAPABLE

The number of older adults is expected to double to 71 million by 2030³. Among current older adults, 42% report a functional limitation, or disability⁴. Despite a small decline in disability rates in recent years, the absolute number of older adults with disabilities is predicted to increase, particularly among low-income, minority and low-education older adults⁴. Many hope to age at home or *age in place*⁵; however, disability can prevent older adults from staying at home. One goal of Healthy People 2020 focuses on the attainment of longer lives free of preventable disease, *disability*, injury and premature death⁶. Nurses are particularly well-positioned to help older adults to remain in their homes and age in place because they may be keenly aware of functional limitations and may have credibility when suggestion solutions.

Disability can be understood as the gap between an individual's competence or abilities and the demands of the environment⁷. The greater this gap, the greater the level of disability and likelihood that an older adult will not be able to remain living independently at home. Interventions that address disability at both the individual and environmental level are more likely to improve disability⁸; however, few have been implemented. CAPABLE is an intervention that addresses disability in older adults from both individual and environmental perspectives².

How CAPABLE differs from current practice

Although based on current evidence, the CAPABLE intervention differs from traditional home care practice in four ways; 1) although nurses and other clinicians care about patient function, they often do not utilize specific strategies to improve their function. CAPABLE training provides RNs and OTs with knowledge and skills to identify and remove barriers to daily functioning. 2) CAPABLE training provides the assessment skills and evidence-based tools to enable clinicians to engage in a client-centered approach. This includes motivational interviewing techniques, use of problem solving, and specific strategies to engage clients in their self-care management. 3) Although this program is designed for older adults with at least one basic activity of daily living (ADL) limitation or two Instrumental ADL (IADL) limitations, it is a preventive program designed to manage and slow functional decline and prevent institutionalization. 4) Ability to function is a result of the combination of an individual's intrinsic characteristics (e.g., strength, balance, pain) and the environment in which they live. Therefore CAPABLE emphasizes systematic attention to patients' physical and social environment in the design of their treatment plan.

The inter-professional approach is a key strategy in CAPABLE. Systematic reviews include studies that describe home-based interventions to improve function in older adults⁹. These interventions are typically delivered discreetly by an OT or RN or PT and do not consistently consider the physical environment as a contributor to disability. By utilizing an intervention team that includes OT, handyman and RN together, CAPABLE contemporaneously addresses both individual function and the environment.

CAPABLE's inter-professional components

CAPABLE is delivered through a series of ten home visits by the intervention team d the course of six months. Each visit is up to 60 minutes. The OT delivers six home visits and the RN four home visits. The client identifies priority areas and the OT and RN work with the client to establish goals during initial visits. These are spaced over time to allow clients to practice new strategies introduced by the intervention team. The handyman provides modifications and repairs to the home, as directed by the OT. The primary components of the intervention include assessment with interactive identification of barriers to function, education and collaborative discussions regarding solutions. Additionally, the intervention team works with CAPABLE clients to provide training on solutions so that the client can then practice strategies on their own. First, a client meets with the OT for two visits during which s/he helps the client identify and prioritize physical performance problem areas and environmental issues, such as the lack of a stairway railing or bathroom handrails. The RN visits start soon after the first OT visit, and initial nursing sessions focus on assessing medical issues that impact daily function such as pain, depression, strength and balance, medication management and poor communication with the primary care provider (PCP). These are commonly identified and highly challenging problems in older adults. These issues are well researched in the literature and include high quality systematic reviews¹⁰. Both the OT and RN assessments utilize a protocol that was standardized for CAPABLE.

The OT focuses exclusively on what hinders an individual from performing their IADLs/ADLs without difficulty. The OT makes recommendations to reduce environmental barriers, thereby improving the person-environment fit and increasing independence in IADLs/ADL function¹¹. The Handyman modifies the environment in accordance with the OT's recommendations to allow the client to implement these strategies in a safe and functional manner. The handyman is not limited to a set number of visits but a \$1,000 maximum budget in a pilot study of CAPABLE was found to cover most safety and function modifications. Communication between the team enhances the care as each team members alerts others of the focus of their visits. Coordinated patient-driven services decreased the number of ADL limitations from 2.3 to 0.7 in a pilot study². Because deficits in ADL function are key driver of nursing home admission, this approach is both patient-centered and policy-focused¹²

Nursing interventions utilized in CAPABLE are evidenced-based and emphasize low-cost solutions that foster problem-solving approaches to build self-efficacy and encourage patients to use their new skills with other problems. Specific interventions were selected based on their success with similar populations. The following case scenario illustrates the application of the CAPABLE intervention and how the intervention team engages with the client. The discussion below describes how the RN component coordinates with the other two roles. See Table 1 for a summary of how each member of the intervention team works to address specific problems and improve ADL and IADL function.

Case Scenario

Mrs. Wilson is a 72- year-old African American woman who has lived alone since her husband died 8 years ago. She has one daughter who visits often. Her medical history is significant for hypertension, heart failure, diabetes mellitus and osteoarthritis. She ambulates with a cane but reports severe pain in her joints, especially her knees and reports difficulty traversing the front steps to her house. She complains of fatigue and is afraid of falling.

Mrs. Wilson identifies a number of problems that may contribute to her disability. She meets with the OT first to assess her individualized functional goals. The OT also discusses what she needs to do to address those goals including physical changes to her home and assistive

devices and strategies to employ to be able to meet her goals. On the first nursing visit, the nurse and the patient complete a protocol-driven assessment that addresses pain, depression, medication adherence, strength, balance, and primary care communication. This assessment is called the C-CAP-RN and was patterned after an OT assessment used in a randomized controlled trial of a home intervention to reduce functional difficulties in older adults called ABLE¹³. In addition to the OT oriented approach presented the ABLE intervention, CAPABLE addresses medical problems cited earlier (e.g. pain, medication adherence, etc.) Unlike other nursing assessments, CAPABLE is almost entirely focused on how medical problems, such as pain, affect an individual's function. In Mrs. Wilson's case, she identifies pain, fatigue and fear of falling as her priority problems to address.

My knees hurt every day

Pain is a common complaint in the elderly and interferes with function due to inability to stand, decreased mobility, and potential depression¹⁴. Clinicians have a range of pharmacologic options for analgesia. Assessing the quality of pain and the adequacy of the current pain regimen is a logical first step. CAPABLE uses both pharmacologic and nonpharmacologic solutions. A review of the literature identified several nursing interventions that were ideal for CAPABLE because they were low cost in nature and could be readily implemented by the RN in the home environment.

The use of topical non-steroidal anti-inflammatory drugs has been validated as an effective means of treating acute pain without the systemic effects of oral analgesics¹⁵. Systematic reviews have also validated the application of topical heat to reduce lower back pain¹⁶. Mind-body interventions have also been shown to improve pain in older adults¹⁷. A report describing a structured review of mind-body interventions noted that progressive muscle relaxation combined with guided imagery was effective at reducing osteoarthritis pain in older adults¹⁷. CAPABLE incorporates such interventions because they provided some support for effectiveness in similar older adult populations. These solutions are evidenced-based. However, there is no evidence-based solution that can summarily address highly challenging problems such as pain in older adults.

I feel weak especially when standing while cooking. I can't go down my front steps

Fatigue and weakness are also common complaints in the elderly. The CAPABLE RN works with the client to assess underlying factors that may contribute to weakness. CAPABLE incorporates a variety of strategies to increase strength and endurance. The intervention promotes strength by encouraging clients to discuss their concerns and by tailoring home-based exercise programs. CAPABLE leverages illustrated CDC and National Institute on Aging training regimens and exercise guidelines readily available for free on the Internet^{18,19,20}. The CAPABLE RN also utilizes paper-based weekly calendar grids with days of the week as useful tools to teach patients to track exercises performed and to record progress. The CAPABLE RN also works with clients to understand how their weakness affects their function (such as not being able to stand to cook) and also to incorporate these simple exercises. Customized exercise regimens take into consideration that the client may have mobility issues and remain seated for most of the day. In such a case, the CAPABLE RN might recommend strategies such as doing leg exercises during TV commercials.

I'm afraid of falling

Fear of falls contributes to falls in the elderly²¹. CAPABLE acknowledges that such fears must be addressed to improve balance confidence, including practical measures such as what to do if you fall, how to get up from a fall, and how to ask for help. In CAPABLE, the OT places each client on the floor and problem solves with them about how to get up. Studies have shown that improving balance confidence is as important as improving balance ability

in older adults and therefore the intervention team considers environmental updates, such as railings, that would increase confidence²². In order to foster both balance ability and confidence in clients, CAPABLE also utilizes low-impact exercises such as Tai Chi as part of the intervention. Several studies that have shown that Tai Chi exercises can improve balance and prevent falls^(23,24). Tai Chi is now recommended by the American Geriatrics Society as a multi-factorial exercise intervention to improve balance, gait and strength training²⁵. Therefore, Tai Chi is a viable option for a range of client abilities. It can be adapted to the ability of the individual, even those suffering from the effects of osteoarthritis, and can even be performed while seated in a chair²⁶. Finally the CAPABLE RN introduces Tai Chi to every client who demonstrates weakness or balance issues²⁵. This demonstration can range from simplified forms of Tai Chi such as moving weight to the edge of balance or swinging arms from side to side and to use of Tai Chi DVDs together.

Summary

The CAPABLE intervention described here offers an inter-professional evidence-based approach to common problems confronting older adults who have conditions that affect mobility and independence. Combining nursing strategies with handyman repairs and skills-based occupational therapy decreased older adults ADL limitations by more than one full ADL limitation in a pilot study of the CAPABLE intervention². Healthcare policy that removes payment barriers to nursing care in the home and promotes aging in place as a cost-effective alternative to institutional care will be an important consideration in the continuing evolution of healthcare reform. The rapidly growing older adult population and the desire by most to age at home demands inter-professional strategies such as the combined CAPABLE intervention to improve functional ability.

Acknowledgments

This publication was made possible by Grant Number 1KL2RR025006-01 from the National Center for Research Resources (NCRR), a component of the National Institutes of Health (NIH) and the John A. Hartford Foundation's Building Academic Geriatric Nursing Capacity Award Program.

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Table 1

CAPABLE Intervention Team Roles

Problem Area	Role	Interventions	Outcomes
<i>My knees hurt every day</i> PAIN	OT	<ul style="list-style-type: none"> ■ Assess for environmental and mechanical factors that may be exacerbating joint pain ■ Teach range of motion exercises that may alleviate pain 	<ul style="list-style-type: none"> ■ Pain is reduced to a level such that client is now standing to cook and can walk down the front stairs if those are the goals she identified.
	Handyman	<ul style="list-style-type: none"> ■ Install stairway rails outside and inside home 	
	RN	<ul style="list-style-type: none"> ■ Assess pain levels with and without activity ■ Review current medication regimens and assess for adequacy / adherence ■ Encourage dialogue with PCP to review current analgesia regimens and dosing ■ Suggest non-pharmacologic therapies to decrease pain 	
Problem Area	Role	Interventions	Outcomes
<i>I feel weak especially when standing while cooking</i> FATIGUE & WEAKNESS	OT	<ul style="list-style-type: none"> ■ Assess how client performs task ■ Suggest sitting to perform task ■ Educate in Energy Conservation Techniques (ECT) ■ Design activities to increase standing tolerance ■ Assess equipment needs (order & train) 	<ul style="list-style-type: none"> ■ Client acquires additional nutrition ■ ADLs enabled
	Handyman	<ul style="list-style-type: none"> ■ Make recommended modifications in kitchen e.g. move chair/table near sink ■ Install lower shelves as necessary 	
	RN	<ul style="list-style-type: none"> ■ Deliver patient education regarding nutrition & cycle of weakness, frailty ■ Suggest easily accessible sources of protein and complex carbohydrates ■ Assess for orthostatic hypotension ■ Implement strength protocol e.g. Tai Chi, CDC/NIA exercises, strength bands 	
Problem Area	Role	Interventions	Outcomes
<i>I can't go down my front steps</i> STRENGTH & BALANCE	OT	<ul style="list-style-type: none"> ■ Assess how client performs task ■ Identify availability of alternate entrance/exit ■ Educate about safe environment ■ Determine equipment needs (order & train) ■ Assess need for home health PT 	<ul style="list-style-type: none"> ■ Client able to go to community activities ■ Increased strength and community engagement ■ Increased QOL

Problem Area	Role	Interventions	Outcomes
	Handyman	<ul style="list-style-type: none"> ■ Installs hand-rails on both sides of steps 	
	RN	<ul style="list-style-type: none"> ■ Assess use of medications that may include dizziness as side-effect ■ Work with client on strength, balance ■ Practice safe methods for going up and down stairs with client 	
Problem Area	Role	Interventions	Outcomes
<i>I'm afraid of falling</i> FEAR OF FALLS	OT	<ul style="list-style-type: none"> ■ Teach problem solving strategies for getting up from the floor ■ Teach how to explain to someone how to assist them to get up ■ Teach home safety to prevent falls ■ Practice proper reaching techniques with client ■ Assess equipment needs (order & train) 	<ul style="list-style-type: none"> ■ Client able to perform more ADLs without fear of falling which increases activity and strength and forestalls further decrease in ADL ability
	Handyman	<ul style="list-style-type: none"> ■ Install grab bars ■ Order reach tools 	
	RN	<ul style="list-style-type: none"> ■ Initiate strength & balance exercises with client ■ Encourage range of motion exercises ■ Practice safe navigation of stairs with client 	