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# A Statewide Educational Intervention to Improve Older Americans' Nutrition and Physical Activity

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The goal of "Take Charge of Your Health for Older Adults," a community-based, statewide intervention program, was to improve the nutritional status, functional ability, and physical activity of older adults participating in Title III congregate meal programs in Georgia. A pre-test, a series of nutrition education and physical activity sessions, and a post-test were completed by 501 older adults. Results showed that the responses to several measures significantly improved after the intervention. For example, the percentage of older adults with knowledge that 5 daily servings of fruits and vegetables are recommended almost doubled (34 to 64 percent); whereas, those knowing that saturated fat increases the risk of heart disease rose from 55 to 77 percent. Consumption of vegetables—not including potatoes, carrots, or salad—increased from 1.6 to 1.8 average servings a day. Older adults also improved their walking speed from 9.8 to 9.1 seconds, and a greater percentage of the participants (from 55 to 82 percent) reported performing leg exercises during the previous week.

**A**dequate nutrition and physical activity are essential for health maintenance, functional independence, and quality of life. Messages designed to prevent disease and improve the health and quality of life for all Americans have been promoted by national public policies such as Healthy People 2010 (U.S. Department of Health and Human Services [DHHS], 2000), the *Food Guide Pyramid* (U.S. Department of Agriculture [USDA], 1996), the *Dietary Guidelines for Americans* (USDA & DHHS, 2000), and the Surgeon General's Report on Physical Activity and Health (DHHS, 1996). Despite the surge in social marketing campaigns, many Americans—particularly older adults—are not meeting these recommendations. Data from the Behavioral Risk Factor Surveillance System, for example, showed that in 1998 only 21.2 percent

of adults age 65 and older in Georgia consumed 5 or more daily servings of fruits and vegetables (Behavioral Risk Factor Surveillance System, 1998). In an additional report in 1999, data from this Surveillance System indicated that in the past 30 days, 41.5 percent of Georgians age 65 or older were not involved in any leisure-time activity, that is, nonoccupational physical activity (1999).

The Administration on Aging's Older Americans Nutrition Program, formerly known as the Elderly Nutrition Program, was established in 1972 to fund nutrition and social service programs for adults age 60 and older. Also known as the Title III Nutrition Program, this service, based on factors such as low income, physical disability, and social isolation, is intended to improve the dietary intakes of older adults, with emphasis given to those

at greatest risk of developing nutrition problems. The Older Americans Nutrition Program also provides numerous services that emphasize preventive intervention programs through the use of nutrition screenings and education, as well as other health-related and social support services (Millen, Ohls, Ponza, & McCool, 2002). It is also the largest U.S. community nutrition program for older adults, serving over 3 million meals daily across the Nation, including meals to almost 32,000 Georgians in 2000 (Georgia Department of Human Resources, 2002).

An Executive Summary of Title III programs reported significant health problems within the U.S. population of older adults (Millen et al., 2002, Ponza, Ohls, & Millen, 1996). Many of these health problems—such as cardiovascular disease, hypertension, diabetes mellitus, and obesity—are related to poor nutrition and physical activity and therefore could be lessened by interventions related to nutrition and physical activity. Data from other national sources (Millen et al., 2002; Ponza et al., 1996) and from within Georgia (Accettura, 2000; Aspinwall, 2001; Brackett, 1999) indicate that participants in the Title III Nutrition Program are at high nutritional risk and have physical impairments included within the list of activities of daily living.

Prior research by the University of Georgia's Department of Foods and Nutrition has exposed the high-risk status of many older adults in north-east Georgia who participate in the Older Americans Nutrition Program and has provided a snapshot of the probable characteristics of the program's participants across the State. These studies found that more than 50 percent of participants were at high nutritional risk and that more than 30 percent were obese, had self-reported

diabetes or poor glucose control, and were hypertensive (Accettura, 2000; Brackett, 1999). These results indicate that this population is at increased nutritional risk, are at increased risk for poor health overall, and could benefit greatly from nutrition intervention programs. Thus, a great need exists to develop, implement, and evaluate nutrition and health education programs to determine gains in knowledge and behavior changes. Hence, the goals of this study were to evaluate the effect of a nutrition education curriculum and an intervention program (leg exercises) designed to enhance older adults' knowledge about nutrition and fitness and to improve their behaviors related to diet, physical activity, and overall health and well-being.

National recommendations indicate that facilities with Older Americans Nutrition Programs are ideal settings for nutrition and health promotion programs in older adult populations (Millen et al., 2002). Most research with these program participants focused on documenting poor nutritional status and nutritional risk factors (Millen et al., 2002). The evaluation of combined nutrition and physical activity interventions targeted to older adults in this program in the Southeast is lacking. Therefore, this evaluation is of great value for both the well-being of the older adults served and for the State in its quest to provide nutrition and health promotion activities and services for this population.

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## Methods

The first phase of the study consisted of training the staff, followed by recruiting the participants, obtaining approvals from institutional review boards and informed consent from participants, and administering the pre-test, which consisted of a

questionnaire and two fitness batteries. The second phase consisted of the intervention: nutrition education and leg-exercise programs. The last phase was the post-test.

## Participant Recruitment and Criteria

The directors of centers for senior citizens, county Extension agents, health educators, and staffs of Area Agencies on Aging helped to recruit participants, schedule interviews, and remind participants when they were to take part in the study. Depending on the particular site, one or more of these individuals were responsible for conducting the pre- and post-tests and for disseminating the nutrition education curriculum. Staff devoted to implementing the study received training from the University of Georgia's Department of Foods and Nutrition staff who were also available throughout the study to answer questions or address problems.

Two criteria were used to determine whether individuals were eligible to participate in the study: (1) they had to be age 60 or older, and (2) they had to receive congregate meals provided by the Georgia Older Americans Nutrition Program. Along with information about informed consent, an oral description of the study, including information about the requirements, procedures, and benefits of participation, was given to all interested persons. We received written, informed consent from 655 men and women from 28 counties representing the 12 Planning Service Areas (geographic and programmatic regions) in Georgia that are served by the Area Agencies on Aging.

## Intervention Programs

The nutrition education and physical activity intervention program was called "Take Charge of Your Health for Older Adults." These commercially available materials were developed by

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the Georgia Division of Aging Services and Wellness, Inc., and focused on correcting risk factors for poor nutrition in older adults and facilitating the voluntary adoption of eating behaviors that promote health and well-being for older adults. The key themes of this curriculum—centering on the program’s three campaign messages: Take 5 a Day, Take Down Fat, and Take Action—were established by the Georgia Coalition for Physical Activity and Nutrition (Georgia Coalition for Physical Activity and Nutrition, 2002) and followed the principles of the *Food Guide Pyramid* (USDA, 1996) and the *Dietary Guidelines for Americans* (USDA & DHHS, 2000).

The 12 lessons of “Take Charge of Your Health for Older Adults” included topics such as heart disease and high blood pressure, calcium and osteoporosis, diabetes, and nutrition and cancer prevention. The five leg exercises consisted of toe raises for the calf muscles, side-leg lifts for the abductor muscles, leg curls for the hamstring muscles, knee extensions for the thigh muscles (quadriceps), and isometric straight-leg lifts for both hip flexors and the quadriceps (National Institute on Aging, 2001). Modifications were also included for elders in wheelchairs or for those otherwise unable to stand. These exercises were graphically depicted on a placemat to help encourage participation and to provide visual cues. Classes were given one to two times a month, and participants were encouraged to perform the leg exercises on a daily basis either at home or at the senior center.

### Assessment Instruments

Dietary intakes of fruits and vegetables, for both the pre- and post-test questionnaires, were assessed by using six questions taken from the State-based Behavioral Risk Factor Surveillance System, administered

in collaboration with the Centers for Disease Control and Prevention (Behavioral Risk Factor Surveillance System, 1999). Information from this Surveillance System is used to track trends in behavior changes among the population, to determine priority health issues and develop plans to address them, and to monitor the effectiveness of interventions. We used the six questions to assess the frequency of consumption of certain fruit and vegetable groups according to daily, weekly, monthly, or yearly timeframes. For our study, we calculated fruit and vegetable consumption by summing the frequency of consumption of the six items from the Surveillance System’s core food-frequency instrument. Knowledge and behavior questions that related to dietary intake, food behaviors, and exercise/physical activity were also addressed by selected questions from this Behavioral Risk Factor Surveillance System. Other questions that focused on older adults’ consumption of milk, knowledge about fat consumption and health, and whether they read nutrition labels were adapted from Elbon (1998).

Following the questionnaire, the participants’ fitness level was assessed with a short-battery form of the Established Populations for Epidemiologic Studies of the Elderly (EPESE) (Guralnik et al., 1994) and the Fullerton Functional Fitness Test for Older Americans (Rikli & Jones, 1999). The EPESE test assessed older adults’ mobility by measuring three categories—balance, strength, and gait speed—as they performed the following tasks: standing balance, chair stands, and an 8-foot walk, respectively. Performance on each of the three categories was scored on a scale of 0 to 4. A summary performance score was calculated by summing each of the three category scores (range from 0 to 12), with increasing values representing

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**Whereas total mean intake of fruits and vegetables and the percentage of people who consumed 5 or more servings per day did not increase . . . knowledge that 5 or more servings of fruits and vegetables should be consumed each day did increase significantly: from 34 to 64 percent.**

functional performance. We designated the functional categories based on the literature (Guralnik et al., 1994), which reported a strong association with measures of self-reported disability. For example, 48 to 91 percent of the study participants who reported that they needed help to walk one-half mile had a performance summary score ranging from 0 to 5, an indication of low functional ability. In comparison 15 to 36 percent of those who reported needing help scored from 6 to 9, an indication of average functioning; and 3 to 9 percent of participants had a summary performance score of 10 to 12, indicating high functional ability.

The fitness test, also used to assess the functional ability of program participants, was designed to obtain normative data regarding physical and functional performance of community-dwelling older adults and to identify criterion-reference standards needed by the older adults to maintain the ability to perform “desired activity goals.” The six components to the Fullerton Functional Fitness Test for Older Americans each reflect a physical parameter of functional fitness and activities of daily living. For two tasks—Sit and Reach and Back Scratch—participants scored 0 if they were able to reach their toes or touch their fingertips of both hands. Reaching past these points resulted in a positive score while not being able to reach these points resulted in a negative score.

The tests included in this battery are based on the guidelines established by the American College of Sports Medicine (Roitman, 2001) and are safe for most community-dwelling older adults to perform without receiving prior medical screening; however, we did not use the 6-minute walk test because of concerns about obtaining approval from the institutional review boards and because of

**Table 1. Self-reported general health status of older adults<sup>1</sup> in Georgia**

Question description	Pre-test	Post-test
	<i>Percent</i>	
<i>Would you say that in general your health is:</i>		
Excellent	6	8
Very good	18	20
Good	44	43
Fair	28	25
Poor	4	4
<i>How much do your health troubles stand in your way (of doing things)?</i>		
Not at all	36	37
A little	48	48
A great deal	16	15
<i>How important is it to your health to be active all or most days of the week?</i>		
Not at all	2	1
Somewhat	16	16
Very	63	61
Extremely	18	22

<sup>1</sup>Age 60 or older who received congregate meals provided by the Older Americans Nutrition Program.

the lack of space to perform this test at some senior centers.

### Statistical Analysis

We used the Statistical Analysis System, Version 8.2 (SAS Institute, 2001) to analyze the data. Paired *t*-tests and chi-squares were used to determine whether pre- and post-test results were statistically significant ( $p < 0.05$ ).

### Results

Of the 655 older adults who enrolled in the study, 501 completed both the pre- and post-test measures. Those completing both measures had an average age of 76; Caucasian comprised 65 percent of the sample, and women, 83 percent. Differences between participants and nonparticipants, by age, gender, and ethnicity, were not statistically significant.

Table 1 describes three measures of the elders’ self-reported general health characteristics. During the pre-test phase, 44 percent of the elders believed their general health was good; whereas, 18 percent characterized their general health as very good. During the post-test phase, 43 percent said their health was good; whereas, 20 percent believed it to be very good, an indication of more favorable views of their general health status. Changes in elders’ responses related to health troubles that prevented them from performing tasks and the importance of activity to their health were not statistically significant before and after the intervention.

Of the six questions examining fruit and vegetable intake, responses to only one increased significantly from the pre-test to the post-test phases (table 2). The mean servings per day

**Table 2. Fruit and vegetable intake, knowledge, and behaviors of older adults<sup>1</sup> in Georgia**

Question description	Pre-test	Post-test
<i>Mean</i>		
<i>How often did you drink fruit juices such as orange, grapefruit, or tomato? (servings/day)</i>	0.91	0.96
<i>Not counting juice, how often did you eat fruit? (servings/day)</i>	1.06	1.09
<i>How often did you eat green salad? (servings/day)</i>	0.43	0.39
<i>How often did you eat potatoes, not including french fries, fried potatoes, or potato chips? (servings/day)</i>	0.37	0.36
<i>How often did you eat carrots? (servings/day)</i>	0.35	0.32
<i>Not counting carrots, potatoes, or salad, how many servings of vegetables did you usually eat? (servings/day)*</i>	1.63	1.78
<i>Total fruit and vegetable intake (servings/day)</i>	4.73	4.83
<i>Percent</i>		
<i>How are your vegetables usually prepared?</i>		
Fried	2	3
Steamed/boiled	96	95
Uncooked/raw	2	2
<i>Consume 5 or more servings of fruits and vegetables per day</i>	37	37
<i>How many servings of fruits and vegetables <u>should</u> people eat each day?*</i>		
0	0	0
1	14	4
2	21	9
3	22	16
4	9	6
5 or more (correct answer)	34	64

<sup>1</sup>Age 60 or older who received congregate meals provided by the Older Americans Nutrition Program.

\* Difference between pre-test and post-test is significant at  $p < 0.05$ .

of vegetables—not including carrots, potatoes, or salad (which were included in other questions)—increased from 1.63 to 1.78. Whereas total mean intake of fruits and vegetables and the percentage of people who consumed 5 or more servings per day did not increase significantly over the period, knowledge that 5 or more servings of fruits and vegetables should be consumed each day did increase

significantly: from 34 to 64 percent. Usual cooking methods for vegetables did not change significantly, with steaming/boiling being the method of choice by 96 percent at the pre-test and 95 percent at the post-test.

From the pre-test to the post-test, participants' knowledge and behaviors regarding dietary fat changed, as measured by six of the seven questions.

These participants also reported an increase in behaviors that reduce the risk of developing heart disease or stroke. For example, the percentage of older adults eating fewer high-fat or high-cholesterol foods improved from 74 at the pre-test to 85 percent at the post-test.

Mean daily milk consumption improved significantly (1.29 vs. 1.37 cups/day) from the pre-test to the post-test phase. The type of milk consumed improved, although not significantly: 66 percent of participants drank 2%, 0.5-1%, or skim milk at pre-test versus 73 percent at the post-test (table 3).

These participants also reported an increase in behaviors that reduce the risk of developing heart disease or stroke. For example, the percentage of older adults eating fewer high-fat or high-cholesterol foods improved from 74 at the pre-test to 85 percent at the post-test. Knowledge regarding fat and heart disease improved. At the pre-test, 55 percent of the participants knew that saturated fat increases risk of heart disease. At the post-test, 77 percent knew this to be the case. Participants, as well, reported exercising more (73 vs. 86 percent) from the pre-test to the post-test.

A significant change was also seen in the methods participants used to cook meat, chicken, or fish. More people switched from frying to broiling and baking. Twenty percent of the participants fried their meat, chicken, or fish at the time of the pre-test; 3 percent broiled and baked these items. At the post-test, 17 percent fried these foods, while 8 percent chose broiling and baking instead. The percentage of participants who read nutrition labels increased, as well: moving from 58 to 66 percent.

Many dimensions of physical activity among the elderly participants improved significantly between the pre- and post-test phases of the study (table 4). Participants who engaged in *any* type of physical activity in the past month increased from 82 to 87 percent, and those who performed leg exercises in the last week or last month increased from 55 to 82 percent and 54 to 88 percent, respectively. Not only did

**Table 3. Dietary fat knowledge and behaviors of older adults<sup>1</sup> in Georgia**

Question description	Pre-test	Post-test
	<i>Percent (mean)</i>	
<i>On average, how much milk do you usually drink each day?</i>		
0 cups	17	14
1	47	48
2	26	27
3 or more	10	12
Mean*	(1.29)	(1.37)
<i>What type of milk do you usually drink?</i>		
Don't drink milk	11	7
Whole	23	21
2%	42	47
0.5-1%	6	8
Skim	18	18
<i>To lower your risk of developing heart disease or stroke, are you eating fewer high-fat or high-cholesterol foods?</i>		
Yes	74	85
No	18	11
Don't know	8	4
<i>What kind of fat increases the risk of heart disease?*</i>		
Saturated fat	55	77
Unsaturated fat	8	5
Don't know	37	17
<i>To lower your risk of developing heart disease or stroke, are you exercising more?*</i>		
Yes	73	86
No	27	14
<i>How is your meat, chicken, or fish usually prepared?*</i>		
Fried	20	17
Broiled/grilled	36	36
Baked	41	39
Broiled and baked	3	8
<i>I read the nutrition labels on food packages before I buy.*</i>		
No	42	34
Yes	58	66

<sup>1</sup>Age 60 or older who received congregate meals provided by the Older Americans Nutrition Program.

\* Difference between pre-test and post-test is significant at  $p < 0.05$ .

activity increase, so did elders' knowledge about physical activity. After the intervention, significantly more of the participants knew that 30 minutes of physical activity should be done most days of the week: 53 versus 68 percent. Participants who reported

being active most days of the week also increased from 80 to 88 percent. In addition, higher percentages of elders disagreed that they did not have time to be active most days, did not like being physically active, and believed it was not safe to be physically active.

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Many of the participants' performance on the fitness batteries improved significantly after the intervention. The mean score of the short-battery form of the Established Populations for Epidemiologic Studies of the Elderly improved significantly (8.0 to 8.3), with more participants moving toward the higher end of the functional spectrum. The percentage of participants in the low category of the short-battery test remained the same at 17 percent (pre- and post-test), while the average category decreased from 51 to 41 percent and the high category increased from 32 to 42 percent. The performance on all measures of the Fullerton Functional Fitness Test improved significantly.

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## Discussion

"Take Charge of Your Health for Older Adults"—a nutrition and health promotion program for older adults in Georgia—proved to be successful, with major outcomes that included positive changes in knowledge related to nutrition and physical activity, improvements in some health behaviors related to diet and physical activity, and decreases in possible barriers to physical activity.

Each of the three key areas of the "Take Charge of Your Health for Older Adults" campaign message—Take 5 a Day, Take Down Fat, and Take Action—improved significantly, especially the participants' knowledge of health-promoting behaviors. Although knowledge of appropriate health behaviors helps improve health-related behavior, skill development and instructional knowledge are almost always necessary to produce behavior changes (Krinke, 2001).

While there were gains in knowledge, not all of these resulted in corresponding improvements in behavior. For

example, although fruit and vegetable knowledge improved markedly, this improvement resulted in a significant increase in self-reported intake of vegetables (excluding carrots, potatoes, and salad) only—just one of the questions related to fruit and vegetable intake. Other researchers have reported similar changes in fruit and vegetable intake following community-based interventions (Ciliska et al., 2000). Cohen and colleagues (1998) found an inverse relationship between perceived barriers to fruit and vegetable intake and income and education, the result of which was lower consumption of fruits and vegetables. The results of our evaluation highlight the need for future programs to target and address the perceived barriers to fruit and vegetable intake in this population.

Increases in knowledge about the types of fat and the need to decrease dietary fat intake resulted in improved dietary behaviors. Our findings are similar to those reported in other samples. For example, Goldberg and colleagues (1990) found that many older adults reported making modifications in their diet to reduce risk factors associated with chronic diseases. Others also reported improved intake in targeted foods, such as lowfat dairy foods and fruits and vegetables, after participation in an educational community gardening project (Hackman & Wagner, 1990).

This intervention was successful in addressing and dispelling some of the myths and misconceptions associated with perceptions of three barriers to physical activity—time constraints, not liking to be active, and safety concerns—which led to a significant increase in the percentage of participants who reported being active on most days of the week. King (2001) suggests that effective interactions for promoting regular physical activity by older adults are dependent on

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**Many dimensions of physical activity among the elderly participants improved significantly between the pre- and post-test phases of the study.**

understanding the factors that influence activity and then taking steps to address them. Performance scores for functional ability on the test battery of the Established Populations for Epidemiologic Studies of the Elderly improved significantly. Poor performance on this test battery has been associated with greater self-reported disability. Scores below 5 have predicted placement in nursing homes and mortality (Guralink et al., 1994). The mean score of 8 for the participants of this study indicates that the older adults in the program are on the verge of losing their independence. Interventions that improve physical function, such as "Take Charge of Your Health for Older Adults," may prolong independence in a group that is clearly at risk. Therefore, the continued use of this test battery may provide valuable information concerning changes in the functional status of this population.

This study had some limitations. First, self-reported dietary intake is difficult to assess in this population because of factors such as low literacy and education levels, low socioeconomic status, age-related declines in sensory functions such as hearing and sight, and possible declines in memory and cognitive functioning. While efforts were made to modify the curriculum to meet the varying educational levels of participants, further adaptations remain necessary to facilitate the most effective teaching and learning methods for this population. Second, coordinating a large statewide program with numerous people who possess varied experience in applied research settings may have affected data collection. Providing training in data collection methods for staff at all sites involved in the intervention minimized this potential limitation. The educators consisted mainly of Area Agency on Aging staff, including registered dietitians, nurses, county Extension agents, fitness instructors and health

**Table 4. Physical activity, knowledge, behaviors, and fitness of older adults<sup>1</sup> in Georgia**

Question description	Pre-test	Post-test
	<i>Percent</i>	
<i>How many blocks can you walk without stopping? (1 block = 1/8 mile)</i>		
0	11	10
1	22	20
2	15	15
3	11	12
4 or more blocks	41	44
<i>During the past month, did you participate in any physical activities or exercises such as running, calisthenics, golf, gardening, or walking for exercise?*</i>		
No	18	13
Yes	82	87
<i>During the past <u>week</u>, did you do leg exercises (as shown in this picture)?*</i>		
No	45	18
Yes	55	82
<i>During the past <u>month</u>, did you do leg exercises (as shown in this picture)?</i>		
No	46	12
Yes	54	88
<i>How much physical activity <u>should</u> people do most days of the week? (minutes)*</i>		
1-5	3	3
6-10	8	5
11-15	14	7
16-20	15	10
21-25	6	4
26-29	1	2
30 or more (correct answer)	53	68
<i>Do any of the following keep you from being active on all or most days of the week?</i>		
I already am active on all or most days of the week.*		
No	20	12
Yes	80	88
I have a health condition that keeps me from being active.		
No	72	77
Yes	28	23
It costs too much.		
No	99	98
Yes	1	2
I don't have time.*		
No	84	95
Yes	16	5

**Table 4. Physical activity, knowledge, behaviors, and fitness of older adults<sup>1</sup> in Georgia (cont'd)**

Question description	Pre-test	Post-test
	<i>Percent</i>	
I don't like to.*		
No	82	91
Yes	18	9
It's too late to improve my health.		
No	97	97
Yes	3	3
It's not safe.*		
No	85	95
Yes	15	5
EPESE <sup>2</sup> functional category scores <sup>3</sup>		
Category 1 (low: 0 to 5)	17	17
Category 2 (average: 6 to 9)	51	42
Category 3 (high: 10 to 12)	32	41
	<i>Mean</i>	
EPESE summary score*	8.0	8.3
Fullerton Functional Fitness Test		
Chair stands (number in 30 seconds)*	10.8	11.3
Arm curls (number in 30 seconds)*	13.9	15.9
Sit-and-reach (inches) <sup>4</sup>	-1.3	-0.5
8-foot Up-and-Go (seconds)*	9.8	9.1
Back scratch (inches) <sup>4</sup>	-4.8	-3.8

<sup>1</sup>Age 60 or older who received congregate meals provided by the Older Americans Nutrition Program.

<sup>2</sup>Short-battery form of the Established Populations for Epidemiologic Studies of the Elderly (EPESE).

<sup>3</sup>Scores relate to elders' mobility in terms of balance, strength, and gait speed while performing certain tasks.

<sup>4</sup>Scoring: Zero: reaching toes or touching fingertips of both hands, positive score: reaching beyond these points, and negative score: not being able to reach these points.

\* Difference between pre-test and post-test is significant at  $p < 0.05$ .

educators, as well as senior center directors. However, not all of the educators may have had formal training in *both* nutrition and physical activity. An effort was made to minimize this potential barrier by providing training on the use of the curriculum. Also, professional staff from the Division of Aging Services, the University of Georgia's Department of Foods and Nutrition, and Wellness, Inc., were available to answer questions. Third, this was the first statewide attempt to evaluate functional status with direct measures by using well-validated

methods designed specifically for assessment of older adults, measures such as the Fullerton Functional Fitness Test for Older Adults (Rikli & Jones, 1999) and the short-battery form of the Established Populations for Epidemiologic Studies of the Elderly (Guralink et al., 1994). In the future, additional training should be conducted before these measures are used in combination: 15.8 percent of the data for the 8-foot-Up-and-Go and for the 8-foot walk were eliminated because of concerns about reliability.

While the program was successful, improvements can be made in future interventions, especially in the area of facilitating behavior changes related to diet. National public policy, such as Healthy People 2010, has emphasized the role of nutrition education and physical activity in maintaining health in people of all ages (DHHS, 2000). Therefore effective nutrition education and physical activity intervention strategies are essential for improving health, nutrition, and functional ability in the older population. These reasons, in combination with the documented success of this program, support the continuation and expansion of nutrition education and physical activity intervention programs to other older adults.

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