NE-1023: Improving Plant Food (Fruit, Vegetable, and Whole Grain) Availability and Intake in Older Adults

Charles Jiles, Ph.D. and Prema Ganganna, Ph.D., R.D., L.D., Principal Investigators

William S. Rice, III, MA, Research Associate
James Lee, Student Research Assistant
Rhea Williams, BS, Research Assistant

Introduction
NE-1023 is a USDA regional research project whose general objective is to identify indicators of nutritional risk in older adults and to design interventions to lessen risks that are identified. The current research assesses the consumption of selected plant based foods. Regional projects are cooperative, sharing subjects, data, and methodology.

To maintain health, nutrition, and functional status of older adults, fruit, vegetable, and whole grain intake are important. A diet meeting dietary recommendations in fruits, vegetables, and whole grains is associated with lower incidences and control of hypertension, type II diabetes, heart disease, and some cancers.

Research Questions
There are four research questions that guided investigations:

- What is the general level of nutritional knowledge of older adults and their particular knowledge related to the health benefits of fruits, vegetables, and whole grains? (NE-1023, Objective 2, Experiment 4)
- To what extent do older adults eat quantities of fruits, vegetables, and whole grains as recommended by USDA guidelines? (NE-1023, Objective 2, Experiment 2)
- How do nutritional knowledge and diagnosis of illness in older adults affect food choices and eating behavior?
- How are food choices and eating behaviors in older adults affected by significant life changes (as indicated by the Holmes and Rahe Stress Scale)?
Methodology and Results
An interview protocol intended to address the first two research questions was developed by NE-1023 researchers at the University of New Hampshire and was administered to a total of 111 subjects (in New Hampshire, Massachusetts, Maryland, Maine, and the District of Columbia). A second survey instrument intended to address all four questions, was developed by UDC researchers, and was administered by research assistants to 142 different subjects (all African American) in the District of Columbia. General results of these interviews revealed that:

- There was a general impression among subjects that whole grains are healthier than their refined counterparts; and that fruits and vegetables are important for good health. They mentioned the importance of fiber (roughage) in digestion and elimination, but were unable to be more specific about benefits.
- When asked to name whole grain foods, "brown" breads, whole grain, wheat, and specific brands of cold cereals were named. Oatmeal and other hot cereals, popcorn, and corn chips were not mentioned nearly as often. In addition, several non whole grain foods were named, including vegetables, beans, legumes, peas, bran and bran flakes, fruits, and nuts (perhaps indicating confusion among high fiber foods and whole grains). In general, identification of whole grains was fair to poor. Several respondents stated that whole grain foods were not as tasty as non whole grains. Fewer than half of those interviewed ate primarily whole grains or ate fruits and vegetables as recommended by USDA.
- The vast majority of subjects suffered from a chronic disease. It was clear from the UDC survey that diagnosis of illness together with nutritional knowledge are significantly stronger motivations for changes in eating behaviors than nutritional knowledge alone. Subjects acknowledged changes in diet as a result of diagnosis of illness, but more significantly they acknowledged knowing the importance of diet before diagnosis.
- Dietary patterns are influenced by factors such as boredom, depression, loneliness, fear, anger, frustration, and other forms of stress. Other significant life changes including death of a spouse or another close family member, personal injury, changes in physical activity, change in sleeping habits, and change in financial state are significant indicators of negative changes in eating behaviors.

Impact of Research Results
There is strong evidence from results of the study to date, that interventions are needed that will:
- Improve identification of whole grain foods
- Increase awareness of the benefits of fruits, vegetables, and whole grains, and encourage eating these foods at levels recommended by USDA. Provide acceptable recipes and cooking techniques.
- Provide nutritional support to older adults who have experienced specific emotional events and/or crises.