

V(A). Planned Program (Summary)

Program # 3

1. Name of the Planned Program

Health, Nutrition and Childhood Obesity Prevention

Reporting on this Program

V(B). Program Knowledge Area(s)

1. Program Knowledge Areas and Percentage

KA Code	Knowledge Area	%1862 Extension	%1890 Extension	%1862 Research	%1890 Research
703	Nutrition Education and Behavior	50%		40%	
704	Nutrition and Hunger in the Population	50%		0%	
724	Healthy Lifestyle	0%		30%	
903	Communication, Education, and Information Delivery	0%		30%	
	Total	100%		100%	

V(C). Planned Program (Inputs)

1. Actual amount of FTE/SYs expended this Program

Year: 2013	Extension		Research	
	1862	1890	1862	1890
Plan	12.0	0.0	3.0	0.0
Actual Paid Professional	11.6	0.0	4.1	0.0
Actual Volunteer	924.0	0.0	0.0	0.0

2. Actual dollars expended in this Program (includes Carryover Funds from previous years)

Extension		Research	
Smith-Lever 3b & 3c	1890 Extension	Hatch	Evans-Allen
71634	0	211588	0
1862 Matching	1890 Matching	1862 Matching	1890 Matching
71634	0	125872	0
1862 All Other	1890 All Other	1862 All Other	1890 All Other
243158	0	0	0

V(D). Planned Program (Activity)

1. Brief description of the Activity

Changing the Health Trajectory for Older Adults through Effective Diet and Activity Modifications:

- 1) Investigate and compare priorities of high fruit and vegetable consumers with the low fruit and vegetable consumers;
- 2) Design new and innovative activities through which nutrition education can be effectively rendered; and
- 3) Collect and modify traditional recipes to improve the nutrition density and to increase the vegetable content and publish the recipe book.

Cloud-based Fuzzy Data Mining for Diabetes Gene Pathway Analysis

- 1) Design and implementation of experiments that compare our approach with its non-cloud computing counterpart to demonstrate the added benefit of cloud computing.
- 2) Research experiences and trainings in bioinformatics and cloud computing for students.

2. Brief description of the target audience

- 1) Adult men and women over the age of 65 who live in Metropolitan Washington, DC
- 2) Low income residents living in multi-family housing
- 3) Researchers/Biologists

3. How was eXtension used?

eXtension was not used in this program

V(E). Planned Program (Outputs)

1. Standard output measures

2013	Direct Contacts Adults	Indirect Contacts Adults	Direct Contacts Youth	Indirect Contacts Youth
Actual	64344	0	10769	0

2. Number of Patent Applications Submitted (Standard Research Output)

Patent Applications Submitted

Year: 2013
 Actual: 0

Patents listed

3. Publications (Standard General Output Measure)

Number of Peer Reviewed Publications

2013	Extension	Research	Total
Actual	0	0	0

V(F). State Defined Outputs

Output Target

Output #1

Output Measure

- Curriculum developed for various workshops, fact sheets for nutrition education for teachers.

Year	Actual
2013	59

Output #2

Output Measure

- Train the Trainer Food Stamp Educational Workshops: 2 hours a week by teacher volunteers; FFNews; Creative Curriculum; Color Me Healthy; Tickle Your Appetite; 5 A Day; DCPS Nutrition Curriculums; and Development of Food Safety and Dietary Quality Lessons

Year	Actual
2013	12608

Output #3

Output Measure

- Assess four day food diary data for the number of portions of fruits and vegetables for registered participants

Year	Actual
2013	109

Output #4

Output Measure

- Establish intervention/focus groups for registered participants consuming less than 5 servings of fruits and vegetables per day and identify the determinants of low consumption of fruits and vegetables.

Year	Actual
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2013 2

Output #5

Output Measure

- Design and implement educational classes to assist registered participants with improving consumption of fruits and vegetables

Year	Actual
2013	4

Output #6

Output Measure

- Youth and adults will receive direct basic nutrition and food safety education

Year	Actual
2013	164071

Output #7

Output Measure

- Youth and adults will receive direct education on health issues and direct education and demonstration on physical activity

Year	Actual
2013	164071

Output #8

Output Measure

- Development of a manuscript for the publication of data on the mechanisms of action of g-T3 on MCF-7 breast cancer cells.
Not reporting on this Output for this Annual Report

Output #9

Output Measure

- Employ microarray experiments and a range of cellular and molecular biological techniques to determine the molecular basis of the action of y-T3.
Not reporting on this Output for this Annual Report

V(G). State Defined Outcomes

V. State Defined Outcomes Table of Content

O. No.	OUTCOME NAME
1	Percentage of parent participants who make better food choices (fruits/vegetables).
2	Percentage of participants who improved eating habits.
3	Development of broad applications for the inhibition of breast cancer cell proliferation and possibly cell transformation
4	Number of participants who increased physical activity and experienced weightloss
5	Number of participants who improved their dietary intake, including an increase in fruits and vegetables
6	Number of participants who improved food resource management practices such as menu planning and food shopping
7	Percentage of participants, who through information and interactive approaches, have adopted better eating habits thereby increasing their daily intake of fresh fruit and vegetables.

Outcome #1

1. Outcome Measures

Percentage of parent participants who make better food choices (fruits/vegetables).

Not Reporting on this Outcome Measure

Outcome #2

1. Outcome Measures

Percentage of participants who improved eating habits.

Not Reporting on this Outcome Measure

Outcome #3

1. Outcome Measures

Development of broad applications for the inhibition of breast cancer cell proliferation and possibly cell transformation

Not Reporting on this Outcome Measure

Outcome #4

1. Outcome Measures

Number of participants who increased physical activity and experienced weightloss

Not Reporting on this Outcome Measure

Outcome #5

1. Outcome Measures

Number of participants who improved their dietary intake, including an increase in fruits and vegetables

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	144927

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Over the past 30 years, obesity rates among children and adolescents have almost tripled throughout the United States. An estimated 17% of children and adolescents aged 2-19 years are obese. The Healthy People 2010 goal of 5% obesity among children was not met. Obesity in children is defined as a BMI greater than or equal to the age-and sex-specific 95th percentiles of the 2000 CDC Growth charts. Childhood obesity is associated with an increased risk for developing type 2 diabetes, high blood pressure, sleep apnea, and high blood cholesterol www.cdc.gov/nchs/data. Children who are obese are also more likely to become obese adults, further increasing their risk for obesity related diseases, including heart disease and certain cancers. Obesity rates have affected low-income children at a disproportionate rate. Data published from the 2009 Pediatric Nutrition Surveillance System study showed that almost one third of the 3.7 million low-income children aged two to four years old were obese or overweight. Obesity in low-income children ages two to four years old has increased in the District of Columbia, from 10.9% in 1998 to 13.3% in 2008 (Center for Disease Control, Morbidity and Mortality weekly report, <http://www.cdc.gov/mmwr> with more boys being obese as compared to

What has been done

144, 927 Contacts (which included 132,262 less than 5 years of age; 2709 were 5-17 years of age; 5112 were 18-59 years of age; and 4,844 were 60 years of age and older including 73,282 females and 71,645 males).

Nutrition education interventions were conducted with children 2-5 years of age in child daycare, preschool, and head start programs. The nutrition educator conducted hands-on nutrition education, cooking, and tasting activities with the children which included 8959 nutrition workshops/demonstrations and other food activities, train-the trainer (teachers) and parent workshops to enforce key messages taught in the classroom so that they will duplicate the same messages at home. The school year to measure the amount of knowledge and behavior change seen in children throughout the school year and participation in the program. Teacher observation retrospective surveys were collected in June 2013 at the end of the 2012-2013 school year. The data were collected from 188 teachers of which 47.9% were African American; 10.1% White; 10.6 Hispanic, and 31.4 % were a combination of other race/ethnicity. program used a pre and posttest retrospective survey at the end of each school year to measure the amount of knowledge and behavior change seen in children throughout the school year and participation in the program. Teacher observation retrospective surveys were collected in June 2013 at the end of the 2012-2013 school year. The data were collected from 188 teachers of which 47.9% were African American; 10.1% White; 10.6 Hispanic, and 31.4 % were a combination of other race/ethnicity.

Results

All data were analyzed using the Predictive Analytical Software (PASW). The SNAP-Ed results were as compared to the beginning of the school year, the following findings are reported: 95.2% responded positive to eating at least 1.5 cups of fruit daily; 90.9% responded positive to eating at least 1.5 cups of vegetables each day; 89.8% responded positive to drinking 2 cups of low fat or fat free milk products every day; 87.1% responded positive to eating at least 5 ounces of whole grains daily; and 94.6% responded positive to children being physically active daily; 91.4% were able to identify healthy food choices; 73.8% choose fruits or vegetables as a healthy snack during classroom parties; 64.3% now bring fruits and vegetables as a snack; 94.1% are willing to try new foods offered at school; 76.9 % have a balanced caloric intake from food and beverages with calories expended; and 97.9% wash hand more often before handling food. The data overwhelmingly indicate that students did change their behavior as it related to eating fruits and vegetables, whole grains and fat-free or low fat products every day; and, became more physically active daily as part of a healthy lifestyle.

The second part of the survey had teachers to compare their behaviors at the end of the school year with the beginning of the school year. As compared to the beginning of the school year, teachers 89.1% of the time now offer healthy food choices to the students at parties and snacks; 89.2% now encourage students to eat breakfast; 85.5% now remind families to bring healthy snacks for school parties; 91.9% now encourage students to be physically active; and 87.5% of the teachers now make healthier personal food choices. Data for the teachers indicated the residual effects of the intervention also positively affected their behavior. Based on the analysis of teacher data, they also changed their behavior as a result of the nutritional interventions and nutrition education implemented in their classrooms.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #6

1. Outcome Measures

Number of participants who improved food resource management practices such as menu planning and food shopping

2. Associated Institution Types

- 1862 Extension

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
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2013

3474

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

The total number of households in the District of Columbia is 248,590 with a median household income of \$40,127.00. However, 80,336 or 32.3% of the households have income less than \$15,000.00. The percentage of families below the poverty level is 16.7% of which 47.7% are female households with children under 5 years of age. The District of Columbia obesity rate is 22.2%. The rate of obesity is highest among non-Hispanic African Americans children followed by Hispanic under 18 years of age. 50% of the children less than 18 years of age live in single-female-headed households and 54.2% of these children live below the federal poverty level.

What has been done

The EFNEP is impacting the lives of women with young children, pregnant women, caregivers of young children and youth with planned nutrition designed to improve the quality of life and reduce the levels of obesity. Planned direct nutrition education conducted by paraprofessionals in the areas of dietary quality, food safety, food security, food resource management and physical activity including hands-on cooking to small groups of adults and youth in 8-10 sessions of 2 hours each. Assessment instruments included a 24-hour recall prior to the start of the interventions and upon completion of the interventions, behavior checklist and an exit interview. Upon completion of the planned sessions, participant graduated and received a certificate.

Results

The EFNEP results for adults revealed that: 100% of the adult participants who completed the program had positive knowledge, behavior and change in condition changes; Increased Grains: 54.5%; Increased Whole grains: 31.8%; Increased Fruits 43.9%; Increased Vegetables: 51.5%; Increased Dairy: 42.4%; Increased Protein: 60.6%; Decreased Solid Fats and Added Sugars 72.7%; Increased physical Activity:53%; Total costs savings for 66 families were \$2,364; 67% (44 of 66) showed improvement in one or more food resource management practices (i.e. plan meals, compare prices, etc.); 76% (50 of 66) showed improvement in one or more nutrition practices (i.e. makes healthy food choices, prepares food without adding salt, reads nutrition labels, etc.); 48% (32 of 66) showed improvement in one or more food safety practice (i.e. thawing food and storing food correctly).

Of the youth, Diet Quality - 90% (517 of 573) youth improve their abilities to choose foods according to Federal Recommendation or gain knowledge; Food Safety - 57% (333 of 573) youth use safe food handling practices more often or gain knowledge; Physical Activity - 49% (309 of 573) youth improve their physical practices or gain knowledge (6th - 8th Grade) ; Food Resource Management - 63% (114 of 181) youth improve their ability to prepare simple, nutritious, affordable food or gain knowledge (9th -12th Grade); Food Security - 20% (14 of 70) youth acquire skill to be food secure of gain knowledge.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior

Outcome #7

1. Outcome Measures

Percentage of participants, who through information and interactive approaches, have adopted better eating habits thereby increasing their daily intake of fresh fruit and vegetables.

2. Associated Institution Types

- 1862 Research

3a. Outcome Type:

Change in Action Outcome Measure

3b. Quantitative Outcome

Year	Actual
2013	75

3c. Qualitative Outcome or Impact Statement

Issue (Who cares and Why)

Good nutrition is important for improved quality of life for the elderly in the twenty first century. In particular, fruits, vegetables, and whole grains have potential benefits for prevention and/or delaying cardiovascular diseases, digestive diseases, and diabetes. To this end, our research attempts to assess the level of consumption of these foods in the elderly, and to design effective interventions to increase their consumption where necessary.

What has been done

Subjects were partitioned into high consumers (group A), and low consumers (group B). Group A individuals consumed more than 5 combined fruits and vegetables and more than 3 whole grains. Group B individuals consumed less than 5 combined fruits and vegetables and less than 3 whole grains. Focus groups were conducted with each group attempting to 1) determine and compare knowledge, priorities, and attitudes of high fruit, vegetable, and whole grain consumers (Group A) with low fruit, vegetable, and whole grain consumers (Group B); and 2) determine and compare cognitive and affective characteristics of these two groups in order to assess their effect on food choices and consumption. Intensive interventions were designed (with subject input) to increase the consumption of fruits, vegetables, and whole grains in group B individuals. These interventions included, but were not limited to: nutrition fun filled interactive games and activities; presentations from dietitians and nutritionists; cooking demonstrations; and field trips to farmers markets. Group A were given information to sustain their eating habits.

Results

Sixty nine percent (75) of seniors participating in the program, changed their diets after an illness was diagnosed. Sixty eight percent (51) of those who made changes knew the value of the changes before their diagnosis. A survey revealed that approximately 1 in 3 (31%) elderly adults prepare more than 5 meals per week for children under 18. Our assumption is that the nutritional knowledge and behavior of these care givers will have direct impact on the nutritional behavior of

the children they care for. Because of this, we will give special attention to interventions for child caregivers.

4. Associated Knowledge Areas

KA Code	Knowledge Area
703	Nutrition Education and Behavior
724	Healthy Lifestyle
903	Communication, Education, and Information Delivery

V(H). Planned Program (External Factors)

External factors which affected outcomes

- Appropriations changes
- Other (turnover)

Brief Explanation

1. There were two nutrition educators who retired/resigned from their positions in FY 13.
2. Due to appropriation changes, program funding was reduced.

V(I). Planned Program (Evaluation Studies)

Evaluation Results

Extension:

Adults

1. 100% of the adult participants who completed the program had positive knowledge, behavior change and change in conditions.

Youth

1. 57% youth use safe food handling practices more often
2. 49% youth improved their physical activity practices
3. 63% of youth improved their ability to prepare simple, nutritious, affordable food.

Research: Changing the Health Trajectory for Older Adults

Program participants were interviewed and surveyed. The survey indicated that individuals made dietary changes after illnesses were diagnosed, even when the knowledge of good diet is evident before the diagnosis. For example, subjects seemed generally aware of the benefits of fruits, vegetables, and whole grains, even when they were not consumed in adequate quantities. The importance of proper diet as part of preventive behavior was emphasized in both groups.

Preliminary quantitative analysis of 53 Group B participants' pretest/posttest data indicates that there was a significant increase in mean consumption of fruits, vegetables, and whole grains. Assessment of general nutritional knowledge, including portion size, also increased. In addition, participant attitudes about the importance of good nutrition improved as a result of the interventions. Sustainability of the observed changes is currently being assessed.

Surveys produced original recipes from subjects. Nutrient analyses were conducted on these original recipes and modified to increase nutritional density for a healthier diet. Those subjects, who supplied personal recipes that were modified, agreed that the modifications did not alter the quality of their dishes.

Key Items of Evaluation

1. Increases in fruits, vegetables and whole grains
2. increase in physical activity
3. Increase in fat free and low fat dairy