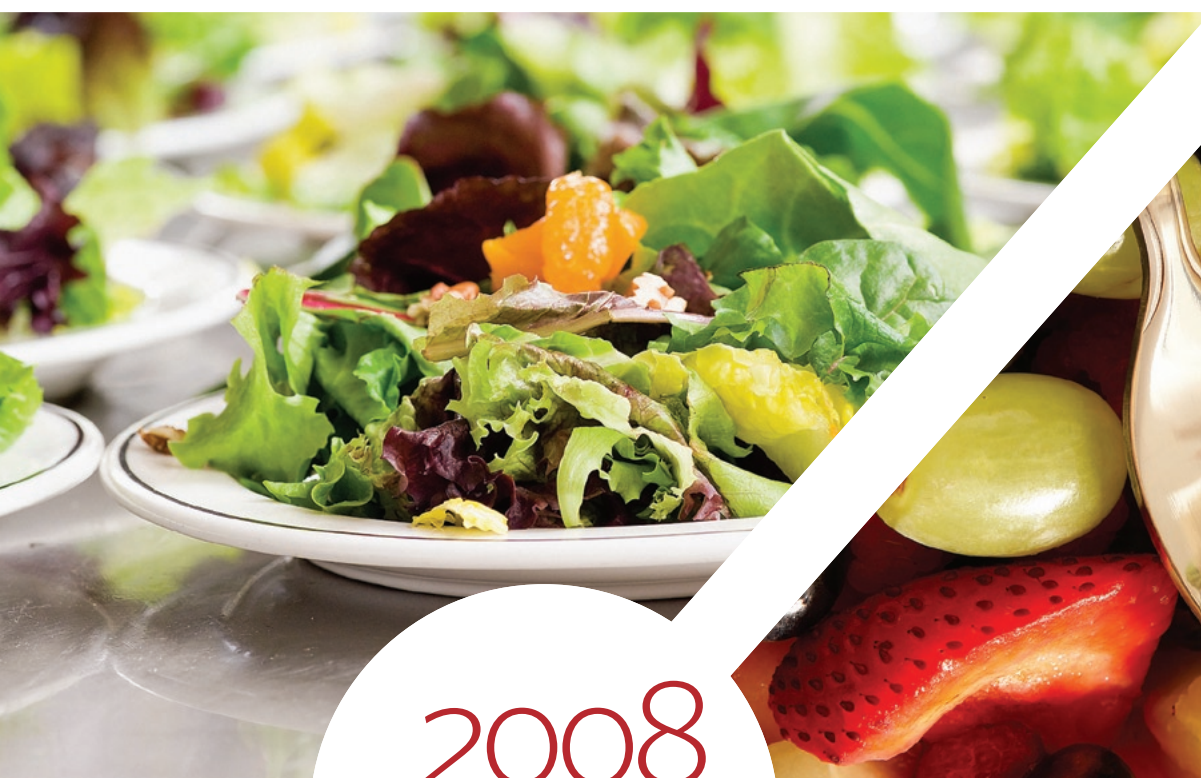




Center for Nutrition, Diet and Health



2008 ANNUAL REPORT



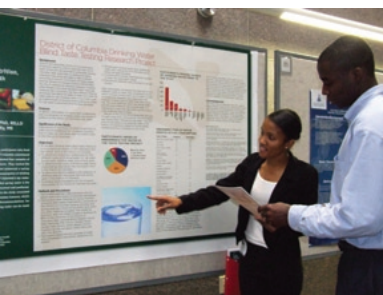
Center for Nutrition, Diet and Health
Cooperative Extension Service
University of the District of Columbia
4200 Connecticut Ave. NW
Washington, DC 20008





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Message FROM THE HEAD



Lillie Monroe-Lord, PhD, RD, LD,
*Head of the Center for Nutrition,
Diet and Health*

The Center for Nutrition, Diet and Health (CNDH), a program unit within the District of Columbia's Cooperative Extension Service at the University of the District of Columbia, is most pleased to present this report regarding our offerings and activities for the year ended September 30, 2008. This document has been prepared to show the progress and impact that CNDH has made toward improving consumer awareness and health sustaining behaviors among District residents and the professionals serving them through education projects related to food, nutrition, and health.

Throughout the year the Center focused its efforts on assisting District residents to acquire and improve knowledge, skills, and behaviors associated with health and well-being throughout the life cycle and with utmost cultural sensitivity. Attention was dedicated to finding ways to address the needs of families to cooperate as holistic interdependent units to build and maintain healthy lifestyles. We remained tethered to a motto of, "healthy persons, families, and communities in DC must eat well to live well." We also attempted to promote the idea that healthy adjuncts to preventive care and self-management of good food and nutrition always include practicing food safety, drinking water and getting adequate amounts of outdoor physical activity.

The Center takes this opportunity to acknowledge the many hands that have contributed to the making of our proverbial pie. Gratitude goes to the U.S. Department of Agriculture for support of the Center's programs as a part of the land-grant activities for state educational institutions. We express a world of thanks for the continued support and contributions of administrators, staff and faculty at the University of the District of Columbia as well as Cooperative Extension Service personnel at land-grant universities across the nation. We are most proud and appreciative of the collaboration provided by our 19 lead partnering organizations and stakeholders throughout the District as well as approximately 600 partnering sites that assist us in contacting the constituents we serve. Lastly, we acknowledge and honor the thousands of residents who seek out and take advantage of our program menu. Without their interest and participation, our efforts would be meaningless.

In this document, we invite you to examine in detail, our projects for food stamp nutrition education, certification of food handlers, research on the taste of drinking water, food safety education, and reduction of overweight and obesity. CNDH expects to continue to work diligently to build new programs that are responsive to the most immediate needs of the unique resident populations in the nation's capital. Efforts are already underway to revitalize existing successes and seek new funding for needed projects and staff development. My door is always open to welcome your comments and suggestions to assist CNDH to improve the quality of life and health for residents and professionals in District communities.

Live well and stay healthy,

Lillie Monroe-Lord



Introduction to



The Center for Nutrition, Diet and Health (CNDH) was established in 2000 out of a need to enhance the impact of our land-grant nutrition, diet and health programs on the residents of the District of Columbia. It is a mission-oriented research, education and public service unit, offering no degree programs of its own, but providing an administrative home for various basic and applied research projects undertaken by Center staff. These projects and programs are useful in addressing the scientific, technological, socio-economic, and cultural needs of District residents in nutrition, diet and health.

The Center's operation combines the cooperative efforts of University faculty, scientists and experts from federal, state, and local governments and the U.S. Department of Agriculture. CNDH is designed to assist District of Columbia residents to acquire the knowledge, skills, and behaviors necessary for healthy lifestyles throughout the life cycle. It is further designed to enhance the total well being of both individuals and families.

The Center's objectives embrace seven broad service categories, including the following:

Professionals and Professional Associations: Offer continuing professional education to meet licensing and certification requirements for dietitians, nutritionists, food service managers, home economists, and other related professionals, and serve as a think tank and resource depository for nutrition, diet and health.

Needs Assessment and Evaluation: Conduct District-wide needs assessments to determine applied research and extension programming priorities for D.C. residents and for the District of Columbia Government.

K-12 Education: Collaborate with DC public, charter, and private school systems to assist in improving school lunch programs through the team nutrition concept.

Community Organizations and Agencies: Develop a high technology lending library for nutrition and health-related education resources for use by the general public.

District of Columbia Government Agencies: Connect the Center with appropriate University Departments and District of Columbia Government agencies for collaboration and program expansion.

Extension System and Urban Universities: Access state-of-the-art and best practices technologies from other urban communities and provide assistance in adapting and applying useful findings to the Center's programs and projects.

Market Research: Conduct cost-benefit analyses that will support disease prevention and health promotion in the District of Columbia.

Current areas of work include obesity, food safety, nutrition education, water studies, and their relationship with healthy eating. Other areas of emphasis include the role of diet in the development of chronic diseases, infant mortality, cancer, heart disease, cardiovascular disease and stroke, overweight and obesity, physical activity, diabetes, tobacco use, immunization, asthma, and access to health care.



Food Handler Education for Small Non-Commercial Service Agencies

AUTHORS: LILLIE MONROE-LORD, PHD, RD, LD AND DAWANNA JAMES-HOLLY, PHD

ABSTRACT

The purpose of the research project was to secure and expand the capability of the existing food and nutrition services for at-risk populations in the Nation's Capital and to promote personal responsibility for practicing food safety. The program serves to provide food sanitation certification and re-certification training for 100 supervisory food handlers. Seven hundred and eighty four (784) community service facilities within the District of Columbia received letters asking them to participate in the project. Individuals were randomly selected from a list that their agency provided. A needs assessment was completed by each agency to derive the curriculum for the food handler course. Among the materials developed for the course were a pre-test and post-test. Findings of the study suggest that there was a significant increase in understanding and ability to handle food safely upon the completion of the course.

Purpose

To promote personal responsibility for practicing food safety and enhance the community's access to information and services including precautions for at risk populations in the District of Columbia.

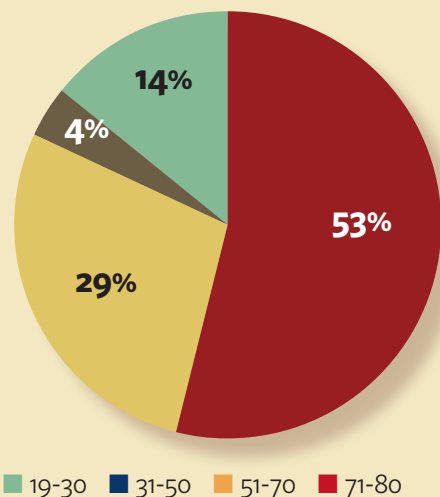
Subjects

Participants included 103 second level food handlers from 68 District-wide community-based, non-profit facilities. The majority (84.5%) of the participants were females as revealed in the study. The participants were between 19 and 80 years of age and 53.3% of the participants were between 31 and 50 years of age.

Objectives

1. To establish an advisory committee to assist in the planning, implementation, and evaluation of the project.
2. To provide mandatory food sanitation certification and re-certification (train-the-trainer) training for 100 supervisory food handlers.
3. To develop a curriculum that supervisory food handlers can implement to teach the Hazard Analysis Critical Control Point (HACCP) approach to food safety to food handlers and their at risk customers.
4. To determine the effectiveness of the curriculum in bringing about an increase in knowledge of safe food handling practices, and changes in food handling behaviors and attitudes among food handlers to reduce the risk of food borne illness.
5. To develop and distribute food safety training materials that community agencies can utilize for on-going training of their staff, volunteers, and customers, once the project funds have expired.
6. To establish a high technology resource lending library on food safety information that will be accessible to the general public beyond the project funding period.
7. To facilitate the licensing process (certified card) for persons who pass the National Certification Examination.

Participants by Age



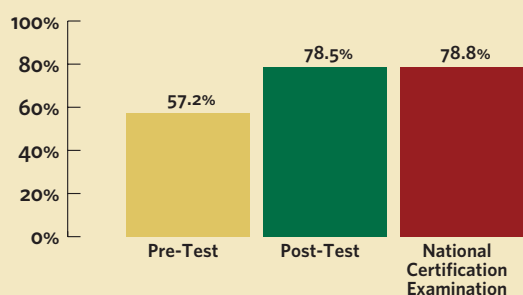
Mean Test Scores

Participants by Class

Class	N (Sample Size)	Mean Test Score
Pretest Class 1	15	63.5
Pretest Class 2	32	53.4
Pretest Class 3	41	57.9
Pretest Class 4	15	57.1
Posttest Class 1	15	82.6
Posttest Class 2	32	82.9
Posttest Class 3	38	74.5
Posttest Class 4	15	74.9
National Exam Score Class 1	15	81.3
National Exam Score Class 2	32	78.4
National Exam Score Class 3	41	77.8
National Exam Score Class 4	15	80.1
Make-Up Exam Score Class 1	1	93.0
Make-Up Exam Score Class 2	3	91.3
Make-Up Exam Score Class 3	10	89.0

Participants Mean Test Scores

Scores by Test



Methods and Procedures

1. Every fourth agency of 784 community service facilities within the District of Columbia was randomly selected to receive a flyer, brochure, and letter describing the project.
2. Each agency was asked to post the flyer, fill out the agency registration form and agency profile form and provide the project with a listing of names of the supervisory food handlers who were eligible to participate.
3. Individuals were randomly selected from each agency list if more than two names were provided. Otherwise, the first of the two names was selected to participate.

4. A needs assessment was completed by each agency that participated in the project. The assessment included questions detailing the type of services provided by the agency, the clientele and food safety education needs.
5. Individuals registered for one of the four 15-hour classes and became trained and certified.
6. Completed registration information was returned to the project by fax.
7. Classes were scheduled and materials were developed including the course outline, pre-test, post-test, and a bank of study questions for the course.
8. Individuals trained and certified will be able to provide training and education for audiences within their specific purview.



Conclusion

The Food Handler Education for Small Non-Commercial Service Agencies program significantly improved test scores. The mean percentages for each class indicate that the course prepares the individuals in food handler training to pass the national exam. The average score for the national examination was reported at 78.8%, which is well above the required 70% to pass. The posttest average was not far behind the national examination scores at 78.5 percent. A sample t-test indicated that the improvements were highly statistically significant in comparing the mean pre-test and post-test scores ($p < .01$). There were no indications that age was a significant variable in the success rate; however, it is typically more difficult for older adults to adjust to training in the classroom. Despite a disparity in the amount of familiarity with studying and classroom environments, a majority of the food handlers were able to pass the exam on the first try. The results of this study indicate that food handler training in the classroom is an effective and necessary tool to increase food handler integrity.

Acknowledgements

The authors wish to thank Joan Lewis, Registered Dietitian, for her support in the implementation of this project.

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Food Safety Support for the Elderly

AUTHORS: LILLIE MONROE-LORD, PHD, RD, LD AND USHA KALRO, RD, LD,

Purpose

To increase compliance with food safety principles among nutritionists, food handlers and low-income elderly in the District of Columbia.

Subjects

The subjects included 9 nutritionists from 9 congregate meal program sites, 48 food handlers from 49 congregate meal program sites, and 762 elderly residents from 39 congregate meal program sites of the DC Office on Aging.

Objectives

1. To establish an advisory committee to assist in the planning, implementation, and evaluation of the project.
2. To provide training and food sanitation certification for nutritionists who supervise food service workers.
3. To develop educational materials for nutritionists to train food handlers and elderly consumers on food safety.
4. To develop easy to read food safety education materials for elderly consumers.

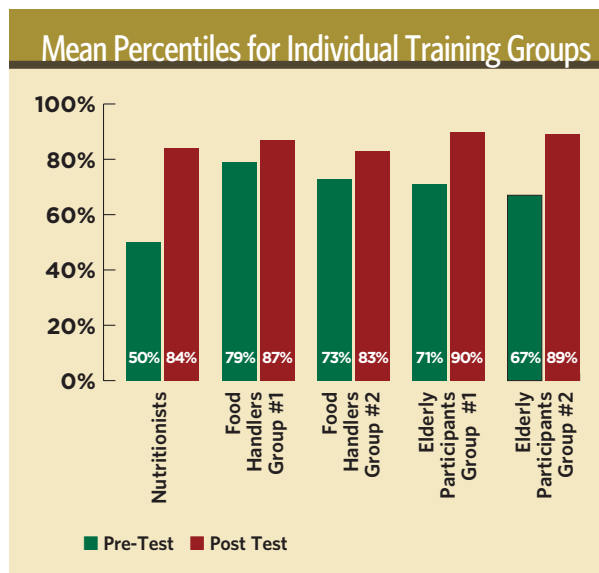


ABSTRACT

The purpose of the Food Safety Support for the Elderly Project was to expand the capacity of existing nutrition delivery systems for low-income elderly in the District of Columbia in order to reduce the risk factors associated with food borne illness, and to increase the food handler's compliance with food safety principles and Hazard Analysis and Critical Control Points (HACCP). The subjects included 9 nutritionists, 48 food handlers, and 762 elderly residents from 36 congregate meal program sites of the DC Office on Aging. The 9 nutritionists were trained using the National Restaurant Association Education Foundation's SERVSAFE Certification program. Upon completion of the training, the nutritionists trained the food handlers and the food handlers provided food safety education to the elderly participants. Training materials were developed including transparencies, handouts and brochures. The findings showed the post-test scores were highly significant when compared to the pre-test scores for all groups of participants. The nutritionists' national exam scores were also highly significant when compared to the pre-test and post-test scores. Follow-up post-test scores indicated retention of knowledge; however, the scores were not significantly different from the immediate post-test scores.

Methods and Procedures

1. Identify training needs for nutritionists, food handlers and elderly participants.
2. Training materials were developed for the food handlers and elderly participants. Training materials were previously provided for the nutritionists.
3. Fact Sheets and brochures were developed and combined into one brochure titled "Food Safety and Hazard Analysis Critical Control Points (HACCP): The Home Version".



Nutritionist Scores

Pre-Test, Immediate Post-Test, and Follow-Up Post Test Based on 100%

Name	Pre Test Score	Immediate Post Test Score	Follow-Up Post Test Score
1	60	83	88
2	68	94	94
3	66	89	91
4	45	83	81
5	47	91	—**
6	62	89	83
7	47	73	86
8	53	71	81
9	—*	83	86

N=9
Mean for Pre-Test: 56
Mean for Immediate Post Test: 84
Mean for Follow-Up Post Test: 86

* Did not take the Pre Test
**Did not take the Follow-Up Post Test

- Training sites were identified and utilized throughout the project. The nutritionists were trained at the headquarters of the D.C. Office on Aging, 441 Fourth Street, NW, Room 940.
- Upon completion of the nutritionist training, the nutritionists reviewed materials for the food service workers and modified the materials in order to provide a more effective training.

Conclusion

The Nutritionists were required to complete a national certification examination, while the food handlers and elderly participants were tested with a modified version of the national examination. Additionally, the nutritionist group included individuals trained in nutrition and two were registered dietitians. As demonstrated by the findings of the study, the Food Safety Support for the Elderly project was successful in increasing compliance with food safety principles and Hazard Analysis and Critical Control Points (HACCP). The results from inferential statistics (t-test analysis) showed that the post test scores were highly significant in every training group. The results showed the Elderly participants in groups #1 (N=36 Sites) and Elderly participants in Group #2 (N=31 Sites), the Food Handlers in groups #1 (N=49 Sites) and Food Handlers in Group #2 (N= 38 Sites) scored highly significantly different from the pre-test to the post-test ($p<0.000$; $p<0.002$; $p<0.001$; $p<0.000$; $p<0.000$). The mean pre-test scores indicated that there was a limited knowledge of proper food handling among every training group, except for the food handlers who previously engaged in food handler training (food handlers #1). Findings of the

study imply that more programs need to be created to increase the number of food service workers who are properly handling food and the number of low-income elderly District residents who practice food safety. It is even more important to increase food safety support for the elderly because the elderly population is steadily increasing.

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District of Columbia Blind Taste Testing

Research Project

AUTHORS: LILLIE MONROE-LORD, PHD, RD,LD AND DAWANNA JAMES-HOLLY, PHD

Background

Jobson and Associates of the U.S. Environmental Protection Agency (2002) reported that one in eight Americans is exposed to potentially harmful microbes, lead, pesticides, or radioactive radon whenever they drink tap water or take a shower. According to DC Commission of Public Health and the Centers for Disease Control (MMWR, 1993), the risk of waterborne infectious diseases increases when filtration and other standard water treatment measures fail. Consumers use many different filtering processes to affect water taste and make the water safe for use. However, taste is most often used as a determinant of drinking water preference, where DC tap water is assumed to be the least favorable.

Purpose

To gather information on consumers' preferences and consumption of drinking water; specifically, in relation to the District of Columbia's tap water.

Significance of the Study

Implications of the study will allow researchers to make recommendations for increased consumption of water by individuals who live and/or work in the District of Columbia.

Objectives

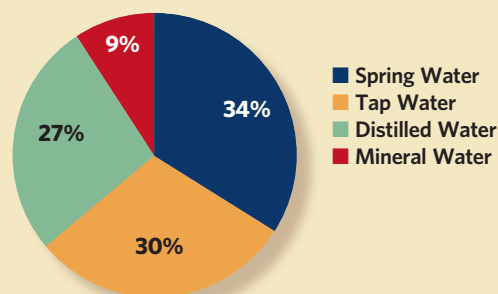
1. To conduct drinking water Blind Taste Testing to a cross-sectional sample of 100 individuals who live and/or work in the District of Columbia.
2. To determine consumers' preferences for the different types of drinking water: DC tap water, spring water, distilled water, and mineral water.
3. To determine the types of drinking water being consumed by individuals who live and/or work in the District of Columbia.
4. To determine factors related to the selection of drinking water by individuals who live and/or work in the District of Columbia.
5. To develop recommendations for the increased consumption of District of Columbia tap water.

ABSTRACT

Two hundred and eighteen (218) participants who lived in and/or worked in the District of Columbia volunteered for the study. Each participant tasted four samples of water in a double blind experiment. They ranked the water in order of preference and answered a survey regarding water preference and consumption of drinking water; specifically the District of Columbia's tap water. Findings of the study suggest that spring water is the most common type of water consumed and preferred. The majority of the participants in the study consumed the recommended dietary fluid intakes however, 44.8% of the participants did not. Recommendations for increased consumption of drinking water can be made as a result of the study.

Taste Testing Project

Participant Order of Preference for Water



Methods and Procedures

1. Two hundred eighteen (218) individuals who live and/or work in the District of Columbia participated.
2. Participants were obtained at various facilities including faith-based organizations, University of the District of Columbia campus activities and during peak gym hours at the Gold's Gym workout chain. Facilities included: The Center for Nutrition, Diet and Health located in Building 52, B04 of the University of the District of Columbia; New Commandment Baptist Church, Miles Memorial CME Church, Greater Mount Calvary Holy Church, Shiloh Baptist Church, Coalition for the Homeless, Gold's Gym, and the UDC FireBird Inn.
3. Participants tasted the four samples of water and completed all documents needed by the project.
4. Each sample was ranked according to preference order, with 1 being the most favorable and 4 being the least favorable.
5. A double blind number identified each sample of water the participant tasted.
6. Educational materials were provided to the participants.

After participants completed the taste test of four different types of water, they completed a survey which involved ranking each cup of water in order of preference. However, each participant was unaware of what type of water they were choosing. The most preferred water was spring water and the least preferred was mineral water. It is interesting to note that tap water was the second most preferred type of water.

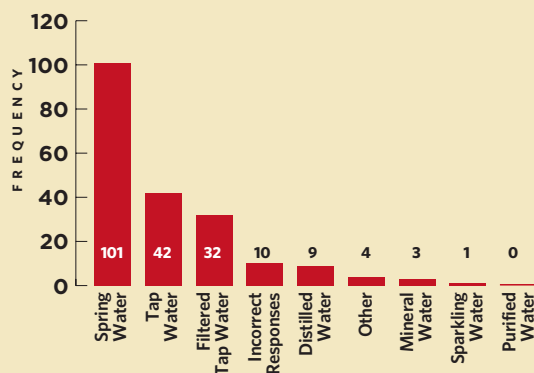
Participant Preferred Type of Water

Despite Actual Consumption

Type of Water	Frequency	Percentage
Deer Park Spring Water	83	41.9
Aquafina	19	9.6
Tap Water	17	8.6
Evian Spring Water	15	7.6
Dasani	13	6.6
Other Types Not Mentioned	13	6.6
Dannon Spring Water	7	3.5
Poland Spring Water	6	3.0
Acadia	3	1.5
Canadian Natural	3	1.5
Crystal Geyser Spring Water	3	1.5
S. Pellegrino Sparkling Natural Spring Water	3	1.5
Amelia Sparkling Water	2	1.0
Amelia Springs	1	0.5
Strathmore Carbonated Low Mineral Water	1	0.5
Incorrect Response	9	4.5
Total	198	100

Participant Primary Source of Drinking Water

Prior to the Study



Results of the survey demonstrate that the type of water most often consumed by the participants was spring water followed by tap water. The influence of the media on drinking tap water in the District of Columbia created an uncontrollable variable and thus, a limitation to the study.

Conclusion

Participants have demonstrated that the preferred source of drinking water is spring water. However, tap water is often consumed and was preferred almost as much as the spring water in the blind taste testing portion of the study. The findings of this study also indicate that at least half of the participants meet the dietary recommendations for water consumption. Factors related to the selection of drinking water may include the influence of the media and the participant's perception of the quality and safety of the water they will



consume. Although a majority of the participants consume the minimum amount of water, more recommendations and resources can be created to motivate others to do the same. Limitations to the study include the time of year participants are filling out the survey (there is typically more consumption of water during the summer months) and the reliability of the participant responses.

Acknowledgements

The authors wish to especially thank student intern, Ms. Latasha Peace, for her contributions to the implementation and development of this project. The authors would also like to thank the following student interns: Eugene Williams III, Amy Busia, Paul Brown, Jr., LaShontae Trainor and Daniel VanKannel for their support.

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Food Stamp

Nutrition Education

AUTHORS: LILLIE MONROE-LORD, PHD, RD, LD AND DAWANNA JAMES-HOLLY, PHD

ABSTRACT

Food Stamp Nutrition Education supports nutrition education activities intended to improve the quality of the Food Stamp Nutrition Education participants. FSNE operates with great diversity, which allows states and localities to tailor programs to local interests and needs, Townsend (2006). Over 50 agencies were able to benefit from the District of Columbia Food Stamp Nutrition Education Program within fiscal years 2005 and 2006. There were also over 100,000 participants in the program from the District government's early childhood development centers, Head Start centers and faith-based childhood development centers. The University of the District of Columbia FSNE Program used a 48-lesson curriculum that was inclusive of the current early childhood education curricula.

Background

White and Maloney (1990) conducted an extensive market study of nutrition education interventions and identified the following components as necessary to successful nutrition education for community-based audiences: 1) involvement of families; 2) developmentally appropriate learning strategies; 3) culturally appropriate learning strategies; 4) behaviorally focused approaches; and 5) activity-based teaching strategies. In addition to these components, research findings also suggest that incorporating the following health and nutrition messages enhance the rate of successful intervention: 1) Specific information about how the risk of chronic diseases can be reduced, if people have a family history that puts them at high risk; 2) presentation of information about what ought to be eaten, rather than what ought to be avoided, as this approach has much greater appeal to people; and 3) personalized supportive and skill-based programming. Marilyn Townsend (2006) stated that evaluation programs should meet generally accepted standards for validity, reliability, sensitivity, internal consistency, easy administration, and should be sufficiently brief and understandable to the Food Stamp Program participants.

Purpose

The mission of this program is to address the needs of the community in the areas of dietary quality and food safety. The program educates individuals receiving food stamps and food stamp eligible individuals to adopt healthier lifestyles in accordance with the "Dietary Guidelines for Americans" and "MyPyramid-Steps to a Healthier You." The program also gives the 139 DC teachers the skills necessary to teach nutrition and food safety, improving each child's ability to select healthy foods, to safely handle food, and to properly prepare and store food. Along with educating children, parents are encouraged to learn food safety and maintain dietary quality for their families. Community outreach is a major focus of the program. The program currently has partnerships with 84 community organizations and agencies in the District of Columbia, providing children with nutrition education in a manner that supports American agriculture and inspires public confidence.



Lessons for UDC Food Stamp Nutrition Education Family Nutrition Program

1= Basic Sanitation	13= Vegetables and Our Senses	25= Trip to the Local Supermarket	37= Fruit Cups with Yogurt
2= Safe Kitchen Practices	14= Shape Sandwiches	26= Identifying Favorite Foods	38= The Carrot
3= Hand washing	15= African Style Slush Punch	27= Identifying Advertised Foods in Magazines & Newspapers	39= Apples and Pears
4= On Old MacDonald's Farm	16= Food that are Red	28= Vegetable Salad	40= Taste Test Different Breads
5= Place Setting/Food Groups	17= Foods that are Green	29= Meat Salad	41= Snack Foods
6= Utensils/Health Safety	18= Foods that are Orange	30= Fruit Salad	42= Foods from Trees (Apples, Peaches, Pears)
7= Popcorn Popping	19= Foods that are White	31= Grilled Food (Meat Groups)	43= Identifying Berries (taste, touch, see and name)
8= Taste Testing Party	20= Foods that are Yellow	32= Grilled Food (Vegetables)	44= Circular Foods
9= Pumpkin Characteristics	21= Vegetable and Alphabet Soup	33= Baked Beans	45= Playing with Toy Foods in the Kitchen
10= Milk & Milk Products	22= Chicken Noodle Soup	34= Picnic Foods (Stuffed Celery "Ants on a Log")	46= Story time
11= Cereals & Breads (Food in the Bread Group)	23= Types of Beans and What They Look Like	35= Deviled Eggs	47= Food Groups with My Pyramid
12= Fruits and Our Senses	24= Bean Soup	36= Fruit Cups	48= Clean and Healthy Smiles

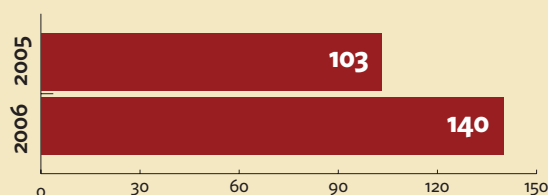
Goals and Objectives

- 1) To address two of the four education domains: Dietary Quality and Food Safety.
- 2) To help Food Stamp participants adopt diet and physical activity practices consistent with the Dietary Guidelines for Americans and My Pyramid- Steps to a Healthier You.
- 3) To improve Food Stamp household safe food handling, preparation, and storage of food.

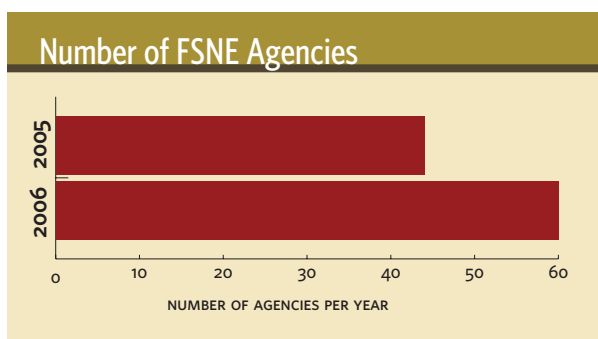
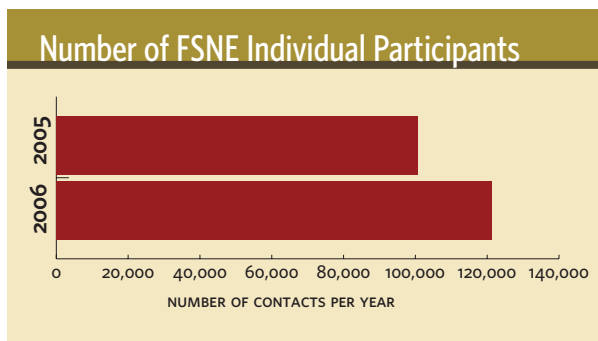
Methods and Procedures

- 1) A child development center partner letter was given upon initial meeting with agency directors and pertinent planning staff (health educators, program managers, etc.) on the content of the program. Following review of the letter the agency was then asked to schedule training to begin program implementation.
- 2) The agency then received a University of the District of Columbia Cooperative Extension Service compliance statement for open membership.
- 3) A registration form was then completed by each Food Stamp Nutrition Education Program training participant.
- 4) Each food stamp nutrition education program training participant printed and signed their name and site con-

Number of FSNE Teachers



- tact information on the District of Columbia Food Stamp Nutrition Education (DC FSNE) participant sign in sheet.
- 5) Each participant who was trained to utilize a Food Stamp Nutrition Education lesson received a CNDH Certificate for professional development hours.
6. Each teacher or teacher's aide was asked to document the content, activities of the lessons used, and the number of class sessions for each of the program activities on the DC FSNE Documentation Forms.



- 7) Each teacher was asked to document the names of those children who were a part of the Food Stamp Nutrition Education lesson. If a roster sign in sheet was not available then a printed list of the first and last names of the participating children in the classroom at the time the lesson was taught was accepted.
- 8) A pre and post-test evaluation instrument was created to collect yes and no responses of children taught in each classroom, which identified the key messages of each program lesson.

Educational Materials Used

- 1) Family First Nutrition Education and Wellness System Curriculums
- 2) Team Nutrition
- 3) 5-A-Day for Better Health Program Materials
- 4) Fight BAC handouts, posters, and stickers
- 5) USDA's Color Me Healthy Curriculum
Some materials were modified to make them more age and culturally appropriate.

Conclusion

In comparing fiscal year, 2005 and 2006, there was an increase in the number of teachers (+36), the number of sites (+16), and the number of participants ((+20,000). A considerable amount of the increase was due to collaboration with the District of Columbia Parks and Recreation Before and After School Program during the second year.

Acknowledgements

The authors wish to thank the United Planning Organization agencies, the District of Columbia Public Schools and the District of Columbia Department of Health for their support in the success of this program.

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District of Columbia Food Handler Certification

Program Model

AUTHORS AND AFFILIATIONS: LILLIE MONROE-LORD, PHD, RD,LD, DAWANNA JAMES-HOLLY, PHD

Background

Almanza and Nesbith reported, "food handlers often lack food safety training. Adequate training is important because foodborne illness results in a cost of \$7.7 to \$23 billion per year to consumers, the food industry, and the national economy" (2004). The value of food safety education by training methods is essential to the sustainability of food safety practices in between license renewals (every 3 years in the District of Columbia). A study in Oklahoma investigated the understanding of basic food safety principles among restaurant managers and found that, "the sources of training, certification, and experience significantly affected their level of food safety knowledge" (Lynch et al., 2003).

Purpose

To develop a foodhandler certification training model for low literacy and hard-to-reach foodhandlers in the District of Columbia.

Subjects

Participants included 624 second level food handlers who were randomly selected from 784 community service facilities. These agencies included 24 meals programs and soup kitchens, 60 centers that serve emergency raw food, over 300 churches in the DC metropolitan Council of Churches Network, and intra-district organizations, including the 400 daycare centers from the DC Department of Health/Office of Early Childhood Development, DC Department of Health/ WIC State Agency and the DC Department of Education/State Education Office.

Objectives

- 1) Assess and document current education activities operating in the Washington metropolitan area to certify food service workers.
2. Examine the effectiveness of four (4) state-of-the-art methods (classroom instruction, CD-ROM, distance learning, self-study in groups) in preparing food handlers for the national certification examination.

ABSTRACT

The research project was designed to develop and demonstrate a preparatory education program for low-literacy food handlers taking national certification examinations through the integration of research, education and extension activities. There were six hundred and twenty four (624) volunteer participants over a 5-year program period that were randomly selected from seven hundred and eighty four (784) community service facilities within the District of Columbia. Program survey assessments were collected during the first two years of the project from participating organizations. At the end of year 3, enrollment was continued through referrals by previous attendees and pre-assessed organizations. The DC Code examination was added to the program instruments after January 2004 due to the District of Columbia Municipal Regulation (DCMR) 25 for all approved food handler education programs to include a comprehensive measure of knowledge of the District's requirements that was in addition to the national certification regulations. Results of the program showed that group mean test scores indicated knowledge was gained between the pre-test and end of the course post-test examinations (+13.9%), national examination (81.1% pass rate), and the DC code examination (83.3% pass rate). There were 46 participants who dropped out of the program and were asked to return for a later course through mailings or telephone calls. Class size in the District of Columbia did not play a role in the outcome of the results in this project.

Class Size and Group Mean Test Scores

Group Mean Examinations	Sample Size By Class Attendance (N)	Group Mean Examination Percentages
Pretest Examination	N=123	61.4
Pretest Examination	N=422	64.5
Posttest Examination	N=101	81.0
Posttest Examination	N=377	78.8
National Examination	N=134	77.4
National Examination	N=444	82.2
DC Code Examination	N=82	84.0
DC Code Examination	N=336	83.2

3. Develop and pilot test a course that will enable low-literate food handlers to prepare for the national certification examination.
4. Develop and demonstrate a research-based model approach to delivering education and training for food sanitation certification in the District of Columbia.
5. Disseminate information on results and implications concerning best practices and model programming for low-literate, hard-to-reach food handlers to personnel in the CSREES system nationwide.

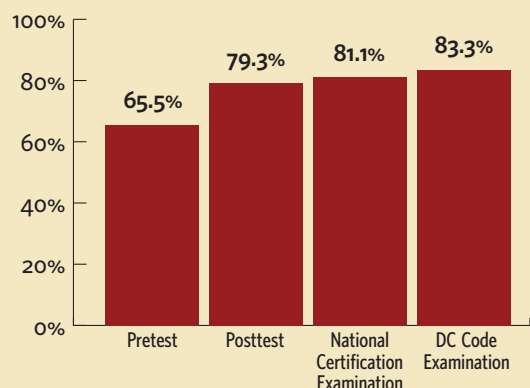
Methods and Procedures

1. Every fourth agency of 784 community service facilities randomly selected within the District of Columbia received a flyer, brochure, and letter describing the project for the first 3 years of the program.
2. Each agency was asked to post the flyer, fill out the agency registration form (demographic data instrument) and agency profile form (survey needs assessment instrument). The agency and provide the project with a listing of names of the supervisory food handlers who were eligible to participate by faxing, mailing or hand delivering the completed documents for the first 3 years of the project.
3. The needs assessment included questions detailing the type of services provided by the agency, the clientele and the food safety education needs.
4. After the first 3 years of the program, participants were enrolled only by referral from previous agencies assessed and program attendees.
5. The majority of the participating agencies faxed their registration forms into the office and when a fax machine was not available, forms were mailed into the office. Some par-



- ticipants were able to give enrollment information by phone to a CNDH volunteer or staff member if this was preferred.
6. A confirmation letter was faxed to each participant for directions and class date & time notification after registration materials was received. (On-site registrants did not receive a confirmation letter because they were already at the class upon registration. However, if there was a request for a confirmation notice or documentation of enrollment, then an official letter was provided). Intra-district agencies such as the DC State Education Office, DC Department of Health and other CNDH continuous participating agencies notified their agency staff of enrollment confirmation and did not receive a letter from CNDH.
 7. Each agency was given an option to register for a 20-clock hour training schedule based on availability. The 20-clock hour course consisted of the Department of Health's 15-clock hour class for all levels of food service employees and an additional 5 hours of program research instrumentation and resources.
 8. Research instrumentation of a pre-test, post-test, and DC code examination (4th day only) instrument was given on the 1st and 4th day of each of the 5 day training classes offered, and on the 1st and 2nd date of a 3 day training class option. A course outline and optional text book at cost was given to participants on the first date of training. The last date of any training schedule was exclusive to the national

Participants Mean Percentages of Test Scores



certification examination by Experior Assessments (December 2005 re-named Thomson Prometric) or ServSafe of the National Restaurant Association.

9. Non-passers of the national certification examination were asked to return for any upcoming trainings until they achieved a passing national certification examination test score. (All participants were given the option to take one-on-one review sessions; but the non-passers were a priority and encouraged the most by CNDH program staff through telephone calls and mailings).

Findings of the Study

There were 624 participants in the program; however, 46 program participants dropped out of the training over the 5 year program period. Participation with each of the evaluation tools varied on the pre-test (N=546), post-test (N=478), national certification examination (N=578) and the DC Code examination (N=418). The mean group test scores showed an increase from the pre-test to the end of the program examinations. There was a very small increase from the 3 testing instruments administered at the end of the training and there was no significant difference between them (post-test, national certification examination and DC Code examinations). As a result, of the training curriculum, knowledge was gained on food sanitation practices. The DC Code examination was added to the program after January of 2004 due to the District of Columbia Municipal Regulation (DCMR) 25 for all approved food handler education programs to include a comprehensive measure of knowledge of the District's requirements in addition to the national certification regulations. Class size did not make a significant difference in the outcome of the program on

any of the group mean test scores. Knowledge gained was a result of individual achievement based on the group means.

Conclusion

The group mean examination percentages showed that classroom instruction is a successful method for training low literacy hard-to-reach food handlers in the District of Columbia. All program participants received a food safety training manual at no cost and access to a self-paced CD-ROM outside of training hours. An optional textbook was also provided at cost. In addition, random classes received training support through food safety cooking demonstrations by CNDH staff, a food safety jeopardy game/trivia exercise facilitated by CNDH staff, handwashing, or safe refrigeration practices that were demonstrated by volunteer program participants. The addition of these various types of program resources proved to be an essential tool for providing first time or low literacy participants with more than one method of receiving classroom instruction.

Acknowledgements

The authors wish to thank food handler certification instructors, Mrs. Ida Harrington and Mr. Dennis Wright, for their support in the implementation of this program. In addition, the authors wish to thank the DC State Education Office, the DC Office on Aging Services, the DC Department of Parks and Recreation Services, the Edward C. Mazique Parent Child Center, and the RCM of Washington Inc., for their continuous support in the success of this program.

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Funds were provided by USDA/CSREES Project number 2001-51110-11421.

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Food Safety and Quality National Initiatives

D.C. Coalition for Food Safety Education

ABSTRACT

According to the Council for Agricultural Science and Technology (CAST), approximately every second of every day, someone is stricken with food poisoning. CAST estimates that as many as 33 million Americans suffer from food-borne illnesses each year, with an annual death toll of 9000. The Department of Agriculture's Food Safety and Inspection Service estimates that food-borne illnesses affect as many as 81 million Americans a year. It has been determined that Food Safety Education is a critical need in the community because of the threat of food-borne illness not being recognized or easily understood, large numbers of at-risk elderly and immuno-compromised individuals for whom food-borne illness may be an unknown killer, and no plans to assist consumers in becoming aware of the health risks involved and those who choose not to practice safe habits and preventative measures.

**AUTHORS: LILLIE MONROE-LORD, PHD, RD, LD
AND DAWANNA JAMES-HOLLY, PHD**

Purpose

To promote an organized effort among organizations and concerns in the Washington Metropolitan Area in order to create an awareness of food safety information, resources, and practices in the community that will significantly impact the ability of citizens at every level of responsibility for food safety to prevent the occurrence of food-borne illness.

Subjects

Participants consisted of 400 individuals from the representative organizations concerned with food safety education. Over 700 community service organizations that interface with the National Capital Area Food Bank participated. Of the 400 individuals who attended the conference, forty-three percent (43%) of them were females and fifty-three percent (53%) were males.

Objectives

1. To identify a representative cross-section of organizations that will commit to examining the existing parameters of food safety and effective ways to ensure prevention of food-borne illness in their local area.
2. To assess the needs of representative organizations such that a collaborative community can be established and strengthened beyond this program.
3. To provide copies of descriptive information about food safety in the District of Columbia such that intercommunication, availability of community services, and science-based principles of food safety will be easily accessible to persons at every level of interest.
4. To provide a mechanism through which at least 500 individuals in the food safety network can receive expert information concerning food safety, establish relationships with other members of the network, and work together to create community-based solutions concerning food safety issues in the District of Columbia.

- To establish a mechanism for persons in the food safety collaborative to provide input into the District of Columbia's next comprehensive health plan.

Conference Theme

The conference theme was "Fighting BAC in the Nation's Capital: Community Food Safety Awareness and Action - A Community-wide Conference on Food Safety Education."



Source: Volk Enterprises: A Global Leader in Food Safety and Worker Protection. "Food Safety". Retrieved from www.volkenterprises.com/food_safety/index.html.

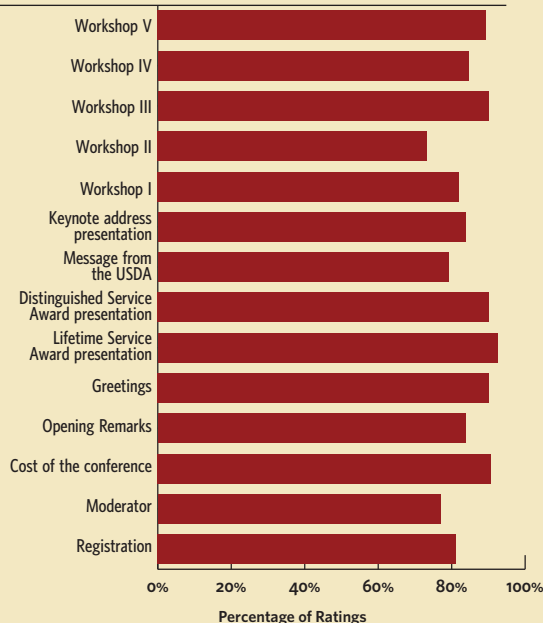
Workshop Descriptions

- New Regulations and Inspections-What Agencies Need to Know:** D.C. Department of Health representatives examined the most current municipal codes of their federal background. Learn about the Mayor's reorganization for e-control of food safety and inspection of small agencies. Get first-hand hints for self-inspection and the know-how to pass food safety inspection the first time around.
- Networking to Ensure Food Safety-Organizing the D.C. Coalition:** Actively engage in developing a network to collaborate for food safety eradication of food borne illness through education of area stakeholders at all levels. Help create the voice that will impact decisions about food

Participant Mean Percentages of Test Scores

Good to Excellent Ratings

Conference Activities and Workshops



safety resources in our Nation's Capital. Outcomes will include an organizational structure and commitments to establish the D.C. Coalition for Food Safety Education.

- Training and Certification in Food Sanitation-Food Service Supervisors Adhering to the Law:** Learn from the top experts what the D.C. Municipal Code requires of at least one supervisor in every food service concern. Receive an overview of the exciting topics in the curriculum and how it relates to the certifying examination.
- Impact of Federal Food Safety Initiatives on the District-Staying in Sync with the 21st Century Momentum:** The Feds have finalized and begun to implement food safety guidelines for the Nation. Get your update from the source, especially concerning the President's Food Safety Initiative and Partnership for Food Safety Education, the Nationwide Consumer Education Campaign for Food Handlers, and the U.S. Department of Agriculture's Food Safety and Inspection Service.

V. Food-Borne Illness and Prevention Strategies-Coming Together, Working Together, Succeeding Together: Examine state-of-the-art information and best practices regarding food safety, particularly, the principles of HACCP. Expert service providers will share District trends in assisting at-risk populations, where the grant dollars are found and how to get a piece of the pie. Since education is a key strategy in "Fighting BAC", attendees will also examine multimedia resources for working with community residents.

At the conclusion of the conference, participants will be able to:

1. Describe new regulations and inspection systems.
2. Network to help ensure food safety in the District.
3. Provide input into the DC Comprehensive Health Plan 2000.
4. Understand Federal initiatives for food safety.
5. Access training for food sanitation certification.
6. Participate in District activities to improve food safety.

Results

Results are based upon the completed written evaluations submitted by the participants at the conclusion of the conference. A Lichert scale was used with ranges of poor, fair, average, good and excellent.

Personal Responses

"This was a very refreshing and interesting up to date series of lectures and workshops.

It is very helpful and you can apply it to your own family."

"Food Safety Initiatives explanations and examples were well given. Easy to understand."

"Conference is excellent, especially provided continuing education for RD's & meals for free!"

"I thoroughly enjoyed the seminar or conference. Hope to return in the future."

"Excellent!"

"Thank you one and all for all your efforts to help us in keeping food safe and to network."

Funding was provided in part by USDA/CSREES. Project Number: 2001-51110-11421

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2006-2007 Overweight/ Obesity SEED GRANTS

Introduction/Background

The leading health problems in the District of Columbia are obesity and overweight, disparities in cancer incidence among African American males, diabetes and adult diabetes among children and adolescents, cardiovascular diseases, lack of physical activity among all age groups, and asthma. Obesity is a major public health problem nationally and in the District of Columbia. The United States faces an unprecedented epidemic of obesity that extends through all races, ethnicities, and socioeconomic strata. Currently, 30% of the US adult population (20 years of age and older) over 60 million people are obese. Obesity increases the risk of dying from all causes as compared to people of normal weight. It is estimated that if both parents are obese, a child has an 80% chance of being obese. If one parent is obese, the odds drop to 40%. If neither parent is obese, the probability is about 10%.

Childhood and youth obesity is even more alarming than the increasing rates of obesity among adults. Since 1970, the prevalence of overweight and obesity have more than doubled among preschool children (2-5 years) and adolescents (12-19 years), and more than tripled for children/youth (6-11 years). The cause of obesity is an imbalance between food intake and energy expenditure. While it is possible to develop obesity (genetics) without any risk factors, the more behavioral and environmental risk factors one has, the greater the likelihood of developing obesity. Major contributing risk factors that influence the obesity epidemic include: lifestyle choices, such as poor diet, lack of physical activities, food choice and portion sizes. The social and psychological impacts of school, work, home and community environments are critical risk factors. Overweight and obesity are clearly associated with Type II diabetes and cardiovascular diseases. There is increasing evidence that obesity may also increase the risk of various cancers. Obese individuals have a 50-100% increased risk of dying from premature death, health complications associated with cardiovascular disease, musculoskeletal disease, diabetes, stroke, kidney disease, and depression. Obesity is a major public health issue in the District of Columbia where 20.7% of the population is considered obese and 32% of the population is overweight (2003).



Purpose

Research proposals designed to address behavioral and environmental factors associated with the complex problem of obesity. The priority focus research target population groups include childhood obesity (2-5 years), children obesity (6-11 years), and adolescent obesity (12-19 years).

Methodology

CNDH provided four seed grants of \$25,000 each for research. Funding was provided based on competitive proposals to DC area universities during the 2006-2007 fiscal year.

Priority Focus Areas

1. Behavioral and environmental factors that influence obesity;
2. Effective strategies and intervention for preventing obesity

SEED Grant Awards:

INSTITUTION:

**Howard University Department of Nutritional Sciences;
College of Pharmacy, Nursing and Allied Health Sciences**

PRINCIPAL INVESTIGATOR:

Allan Johnson, PhD, LN

AMOUNT AWARDED:

\$24,953.02

TITLE:

Implementation and Testing of an Intervention to Reduce Overweight in Elementary School Children

Abstract #1: An intervention to reduce the prevalence of overweight in children aged 8-10 years will be implemented and evaluated. The intervention will be conducted among students in grades 3-4 in two Washington, DC elementary schools and

will involve their parents/guardians. A randomized controlled design will be utilized. Students and parents/guardians in the intervention school will be exposed to the following four components of the intervention: nutrition education of children and their parents/guardians using Team Nutrition materials; modification of school meals and a la carte menu items to ensure compliance with the Dietary Guidelines for Americans 2005; education to reduce sedentary behaviors (TV watching, and use of video games and computers) using the SMART curriculum; and physical activity using the Physical Best program. Students and parents/guardians in the control school will not be exposed to the intervention.

INSTITUTION:

**Howard University College of Medicine
Department of Physiology and Biophysics**

PRINCIPAL INVESTIGATOR:

Richard Millis, PhD

AMOUNT AWARDED:

\$25,000.00

TITLE:

Risk Markers for Obesity in African American Adolescents

Abstract #2: The African-American predilection for obesity is a complex problem thought to be associated with abnormal autonomic responsiveness to environmental stressors and ingestion of food. Paced breathing elicits high heart rate variability and stress elicits low heart rate variability. Low heart rate variability after eating is a risk factor for obesity because of its association with a limitation on sympathetic modulation of postprandial insulin secretion, fat utilization, adipokinesis and fat utilization. A sub-population of healthy normotensive adolescent African-Americans (18-19 year old university students), presumed to be at high risk for developing obesity in the future, may exhibit low heart rate variability with high sympathetic tone and low fat utilization after eating. The study will measure of heart rate variability after eating isocaloric high carbohydrate, high fat and high protein meals on different days. Subjects will be organized into groups exhibiting low and normal postprandial fat utilization by indirect calorimetry measuring the respiratory quotient, a noninvasive index of nutrient (carbohydrate vs. fat) utilization, before and after eating. The remaining subjects will be classified as a normal "broadband" group. measure total body fat content and regional body fat distribution and to correlate low heart rate variability with a limitation of postprandial increase in sympathetic tone and respiratory quotient.

INSTITUTION:

**George Mason University
Department of Health and Human Services**

PRINCIPAL INVESTIGATOR:

Jean Moore, PhD, RN

AWARDED AMOUNT:

\$25,000.00

Title: Childhood obesity: The effect of a nutrition intervention program, Color Your Pyramid on nutrition knowledge, eating behavior, physical activity and nutrition status on Washington, D.C. Schools

Abstract #3: The purpose of this project is to develop, implement, and evaluate a culturally relative nutrition intervention program, Color Your Pyramid. Color Your Pyramid is an educational program created by the researchers and framed by the revised USDA Food Guide Pyramid and the online component [www. MyPyramid.gov](http://www.MyPyramid.gov). The intervention will be designed to reduce and prevent childhood obesity in District of Columbia schools. Specifically, the intervention will improve nutrition knowledge, dietary behavior, physical activity, and nutrition status. The approach to implementing the nutrition intervention program will be to prepare individuals enrolled in masters programs in nursing at George Mason University to assess, plan, implement and evaluate the program.

INSTITUTION:

**George Washington University
Department of Clinical Leadership and Management
School of Medicine and Health Sciences**

PRINCIPAL INVESTIGATOR:

Jessica Scheer, PhD

AWARDED AMOUNT:

\$25,000.00

Title: Lightening the Burden of Childhood-Onset Overweight and Obesity: An Evaluation of the Capital Area Food Bank's Health Promotion and Nutrition Education Program to Prevent Overweight and Obesity Among Low-Income Latino and African-American Children and their Families

Abstract #4: The proposed evaluation study of the well-established nutrition education programs for low-income families that have been sponsored by the Capital Area Food Bank ("Food Bank") since 2000 will address the above-mentioned gaps in the literature. The Principal Investigator and two graduate health professional students will track the rates and process of weight loss and adherence to recommended behavioral changes among 45 African-American and Latina program participants and their overweight or obese children at the end of the 6 week set of Saturday morning sessions and at intervals of 1, 3 and 6 month post-health promotion intervention. While these nutrition education programs have been operative since 2000, they have not yet been evaluated for longer-term outcomes. Specifically, the similarities and differences between successful and unsuccessful participants will be discovered.

Partnering Organizations & CNDH Participating Programs

CNDH Participating Programs

1. UDC Food Stamp Nutrition Education Family Nutrition Program
2. DC Foodhandler Certification Program Model
3. Food Handler Certification for Small Non-Commercial Service Agencies
4. DC Drinking Water Blind Taste Testing Research Project
5. DC Coalition for Food Safety Education
6. Food Safety Support for the Elderly

Lead CNDH Partnering Organizations

Boys and Girls Clubs of Greater Washington
Capital Area Community Food Bank
Children's National Medical Center
District of Columbia Department of Health, WIC Nutrition Programs
District of Columbia Office on Aging Services
District of Columbia General Hospital
District of Columbia Office of Early Childhood Development
District of Columbia, Department of Mental Health Services
District of Columbia Parks & Recreation
District of Columbia Parks & Recreation, Office of Educational Services
District of Columbia Public Schools
District of Columbia Public Schools Headstart Programs
District of Columbia State Education Office
Georgetown University Medical Center
Howard University
Nation's Capital Child & Family Development (NCCFD)
National Institute of Health
United Planning Organization
United States Department of Agriculture, Food and Drug Administration (FDA)

CNDH Partnering Organization Sites

4C's Shelter House (2)
Asian American Leadership, Empowerment and Development (2)
Adams Before & Aftercare Center, DC Parks & Recreation Office Educational Services, United Planning

Organization (1)
Adams Elementary School, DCPS Headstart Programs (1)
ADAS Senior Fellowship, DC Office on Aging Services (6)
Adnorahs (2)
Adventure Clubs Inc. (2)
African American Music Association (2)
Agape Cabbage Patch (2)
Agape(2)
Aiton Elementary School, DCPS Headstart Programs, United Planning Organization (1)
Allen Chapel A.M.E. Church (3)
Allen House, DC Office on Aging Services (6)
Alma Tibbs Daycare Center, DC Office of Early Childhood Development (3)
A.M.E. Church (3)
Amidon Before & Aftercare Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)(2)
Amos I, Community Academy Public Charter School(2)
Amos II, Community Academy Public Charter School (2)
Anthony Bowen YMCA (2)
American Public Health Association (APHA) (5)
Apple Early Literacy Preschool(2)
Applehouse Community Center (3)
Apra, DCPS Headstart Programs, United Planning Organization (1)
Aramark George Washington University (2)
Arch Training Center (2)
Associates for Renewal in Education (2)
Arena Stage (2)
Arthur Capper Center, DC Office on Aging Services (6)
Asbury Dwelling, DC Office on Aging Services (6)
Asian American Lead (2)
Atlantic Gardens Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)
Atlantic Terrace Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)(2)
Azeze Bates Child Development Center, NCCFD (2)
Bald Eagle Before & Aftercare (2)
Bald Eagle Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)
Baltimore District Office, Food and Drug Administration

tion, US Department of Agriculture (5)
Bancroft Before & Aftercare Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)
Bancroft Elementary School, DCPS Headstart Programs, United Planning Organization (1)
Banneker Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)
Barbara Ann's Day Care (2)
Barnard Elementary School, DCPS Headstart Programs, United Planning Organization (1)
Barney Neighborhood House, DC Office on Aging Services (6)
Barney Senior Center, DC Office on Aging Services (5)(6)
Barry Farms Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)(2)
Beacon House (2)
Behrend Adas Senior Fellowship(2)
Bell Teen Parent and Child Development Center (2)
Bennett Babies Inc. (2)
Benning Park Early Care Center, DC Parks & Recreation Office Educational Services, United Planning Organization (1)
Best Child Development Home (5)
Bethlehem Home Inc. (2)
Betty's Blessed Children (2)
Beverly (5)
Birney Elementary School, DCPS Headstart Programs, United Planning Organization (1)
Boys & Girls Club of Greater Washington (Hopkins Branch) (2)
Boys & Girls Club of Greater Washington (Ballou Branch) (2)
Boys & Girls Clubs of Greater Washington (FBR Branch) (2)
Bradley Mission Center (5)
Brainfood (3)
Bre Bre's Child Development Home (2)
Bridge Back Treatment Facility (2)
Bright Horizons-Wilmer Hale Daycare (2)
Brightwood Elementary School, DCPS Headstart Programs, United Planning Organization (1)
Broadcaster's CDC (2)
Bruce Monroe Elementary School, DCPS Headstart Programs, United Planning Organization (1)
BSC, DC Office on Aging Services (6)

Bundles of Joy Child Development Center (2)
 Burroughs Elementary School, DCPS Headstart Programs, United Planning Organization (1)
 Burrville Elementary School, DCPS Headstart Programs, United Planning Organization (1)
 Calvary Baptist Church Homeless Program (3)
 Campbell Heights #9, DC Office on Aging Services (6)
 Cancer & Center on Black Aged Incorporated (5)
 Capital Area Community Food Bank (5)
 Capital Hill Towers, DC Office on Aging Services (6)
 Capital View Plaza, DC Office on Aging Services (6)
 Catholic Charities Inc. (5) (3)
 Catholic Charities Model Cities Center (2)
 Center for Science in the Public Interest (5)
 Center for the Blind, DC Office on Aging Services (6)
 Center for Military History (2)
 Center Union Mission (5)
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