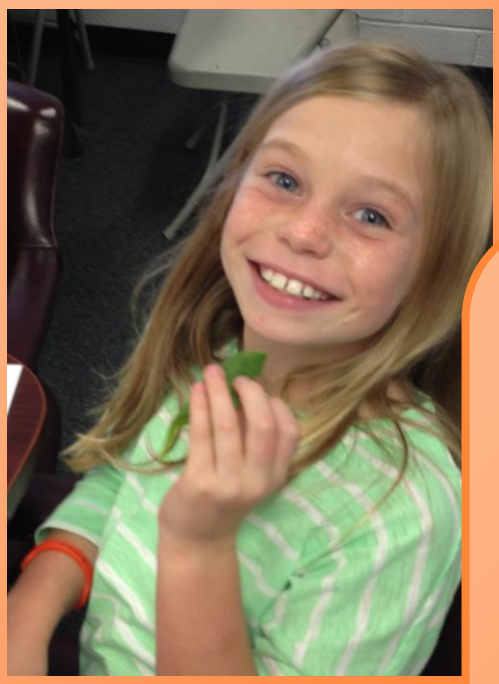


Nutrition Education Program

FY13 Report

Auburn University

Nutrition Education Program

Auburn University FY13 Report

The Alabama population shows great disparity in terms of obesity rates, obesity-related disease rates, low fruit and vegetable intakes and minimal physical activity levels. If obesity rates continue on their current trajectories, by 2030, Alabama could have adult obesity rates above 60 percent. Alabama also is classified as in the stroke belt and the diabetes belt due to high incidences of these obesity-related diseases. Eighty percent of Alabamians consume less than a minimum of five servings of fruits and vegetables each day.

Nationally, adults in Alabama are ranked:

4th most in ***obesity***

1st ***hypertension***

4th type 2 ***diabetes***

8th lowest ***fruit & vegetable intakes***

5th ***physical inactivity***

Source: F as in Fat (2012)

Alabama continues to be first or last in negative statistics for all national well-being indicators. One factor that contributes to these disparities is that the SNAP population in Alabama is disproportionally affected by these health issues. These disparities contribute to high health care costs. Current health care costs are sobering; current trajectories suggest that by 2030 these costs will skyrocket.

Research has confirmed that well-designed, behaviorally-driven interventions are effective at improving diets and nutrition-related behaviors. Nutrition education through the Nutrition Education Program (NEP or SNAP-Ed) is a key strategy for positive behavior changes that can lead to improved health, especially for the 18% of Alabama's population participating in SNAP.

Body Quest: Food of the Warrior

A Childhood Obesity Prevention Program

for Elementary Youth

Fourth Year of a Four-year Impact Evaluation

The flagship nutrition program for NEP was *Body Quest: Food of the Warrior*, a childhood obesity prevention program for elementary youth. BQ is a 4-year impact evaluation study that is a unique and comprehensive program to prevent childhood obesity. BQ empowers 3rd graders in Alabama to (1) increase fruit and vegetable consumption, (2) increase physical activity, (3) improve sleep hygiene as it relates to nutrition and (4) enhance family involvement in terms of diet and physical activity. Although BQ has four objectives, the F/V objective was the one being rigorously evaluated in this 4-year impact evaluation.

FY13 was the 4th year of a 4-year impact evaluation for BQ. FY13 also was the second full year of BQ implementation in schools throughout Alabama. BQ activities and accomplishments were varied and were on target for a statewide implementation that began in September 2012 and continued throughout FY13. Most of the BQ activities overlap between fiscal years as the activities are long-term, continuous and evolving.

Dissemination and Marketing of BQ

According to the approved FY2010-013 NEP plans, one of the major goals of BQ in year four (FY13) is to disseminate BQ curriculum and impact evaluation data. This was accomplished as evidenced from dissemination and marketing of BQ through honors, awards, publications, presentations, marketing, replicability and multi-state initiatives as shown below.

1. Awards and National Recognition

National Extension Association of Family & Consumer Science

National Award: To recognize an exemplary Extension program

- Florence Hall Award
  Body Quest: Food of the Warrior (Preventing Childhood Obesity Using Technology via iPads and Clickers
  - 1st Place, National
  - 1st Place, Southern Region
  - 1st Place, State Affiliate

Jeanne Priester Award

National Award: To honor an Extension program positively impacting the health of people

- *Body Quest: Food of the Warrior*

Society of Nutrition Education and Behavior

Abstracts:

- *Changes in Fruit and Vegetable Consumption of Third Grade Students in Body Quest: Food of the Warrior*
- *A Childhood Obesity Prevention Program via iPad Education: Body Quest: Food of the Warrior*

Presentation:

- *Technology and Apps*

Joint Meeting of the Alabama Association of Family and Consumer Sciences and National Extension Association of Family and consumer Sciences, Alabama Affiliates

Presentation:

- *A Childhood Obesity Prevention Program, Body Quest: Food of the Warrior*

Auburn Speaks *(submitted)*

Journal Article:

- *Body Quest: Combatting Childhood Obesity through Nutrition Education*

Journal of Nutrition Education and Behavior (*submitted*)

Journal Article:

- *Changes in Fruit and Vegetable Consumption of Third Grade Students in Body Quest: Food of the Warrior, a 17-Class Childhood Obesity Prevention Program*

2. Marketing

BQ Website: The website contains a wealth of information on BQ content and use of BQ in the classroom. Designed for external users, the website includes: development history, goals, team members, action photos, ordering information, app and tasting descriptions, how to get started and contact information. www.BodyQuest.aces.edu

Supplemental Nutrition Assistance Program Education through the Land-Grant University System for FY2010: A Retrospective Review: This report was written to provide a baseline for future planning and programming and to document outcome data to build an evidence base for nutrition education through SNAP-Ed. In this report, Alabama was highlighted for the work done with food assistance females to increase vegetable consumption through the "recipe tester" model. Source: Sexton, J.S. (2013). Supplemental nutrition assistance program-education (SNAP-Ed_ through the land-grant university system for FY2010: A retrospective review. Starkville, MS.

SNAP-Ed Connection: Body Quest was a "Featured Resource" in the October 2013 SNAP-Ed Connection e-Bulletin (Volume 1, Issue 3). http://snap.nal.usda.gov/e-bulletin

eXtension Community of Practice (CoP): A county report was created for local stakeholders. This report has been showcased in the eXtension CoP for Community Nutrition Education. *iPads to Combat Childhood Obesity: Alabama's Body Quest Initiative* illustrates the local impacts found through BQ. http://www.extension.org/low_income_nutrition_education

3. Replicability

BQ is easy to replicate as all materials are free at www.BodyQuest.aces.edu and the iPad apps through the Apple App Store. If iPads are not available, pencil-paper activities that parallel the apps are found in the curriculum. BQ traditional and non-traditional materials are theoretically-based, behaviorally-focused and developmentally appropriate. Access to these resources allows anyone to use BQ to prevent childhood obesity and make it part of the cultural fabric of their state.

4. Multi-state Initiative

BQ is currently being replicated in its entirety throughout Louisiana. This partnership between LSU and AU Extension has been formed to support the benefits of BQ on childhood obesity prevention.

Body Quest in Action

FY13 was the second year of full implementation of BQ in schools. Each SNAP-Ed Extension, full-time, nutrition paraprofessional educator (n=24) worked with six third-grade classes. Three classes were designated as either a treatment (iPad education) or control group. Treatment groups were in different schools from control groups. Schools were randomly assigned with one to three classrooms per school. An Institutional Review Board approved this study. Students were recruited using standardized scripts; parents of participating third graders signed an informed consent.

Students were third graders (n= 2,564) from 38 Alabama counties. Treatment students (n = 1,335) were 51% male, 44% black and 56% non-black, predominately white. Control students (n=1,229) were 53% male, 47% black and 53% non-black, predominately white. All students came from schools with 50% or more students receiving Free/reduced Lunch.

The *Body Quest: 2012-2013 Protocol*, an internal tool was developed to help BQ educators manage the activities in each BQ class. It provided weekly step-by-step instructions for implementing a BQ class.

During the 2012-2013 school year, educators provided 17 weekly, 45-minute BQ classes to the treatment group. Classes consisted of a pre-assessment (Week 1), intervention (Weeks 2-16) and a post-assessment (Week 17).

During intervention, six nutrition topics were sequentially taught: trying new foods, food groups, balanced meals, food nutrients, healthy snacks and extending FV message to others. At every intervention class, FV were emphasized. During the six traditional, educator-led lessons, instruction included lecture and interactive activities using a BQ card deck. In the following week, a non-traditional reinforcement lesson was taught via one of seven iPad apps. For the treatment group only, vegetable tastings were provided at alternating classes and family members received weekly take-home activities. Control groups were only given pre- and post-assessments, but no intervention, FV tastings or family take-home messages.

Tastings were integral as they exposed students to vegetables and removed accessibility barriers students may face at home. In FY13, only tastings of vegetables were conducted as data from FY12 indicated that students liked fruits at the onset of BQ. Vegetables were chosen based on accessibility in local grocery stores and also by frequency of use in the School Lunch Program. Tastings consisted of six raw vegetables and included: bell peppers, broccoli, carrots, cauliflower, spinach and tomatoes. A one-ounce cup of ranch dressing was distributed with vegetables.

Instrumentation and Data Analyses

Demographic data were collected by educators at the beginning of the study. Each school administrator provided students' gender and race. FRL data were provided by the Alabama Department of Education. The school lunch manager provided if a school participated in the Fresh Fruit and Vegetable Program.

A *What's for Lunch* (W4L) checklist was developed to assess FV consumption of students eating a school lunch. Criteria for the checklist were to be easy-to-use and time-efficient for students and classroom teachers, yet monitor consumption change. Students' self-reported consumption was defined as eating the portion or serving of each food provided by the School Lunch Program.

Educators customized W4L based on each school's lunch menu for a 5-day period and then, personalized W4L with name of student. Forms were distributed prior to the corresponding 5-day period. Immediately after lunch, students reported on the W4L whether or not they ate each food provided by the School Lunch Program. Classroom teachers assisted students with any questions about completing W4L. Completed forms were collected by

educators. Treatment and control group students completed W4L each 5-day period during pre (Week 1) and post (Week 17).

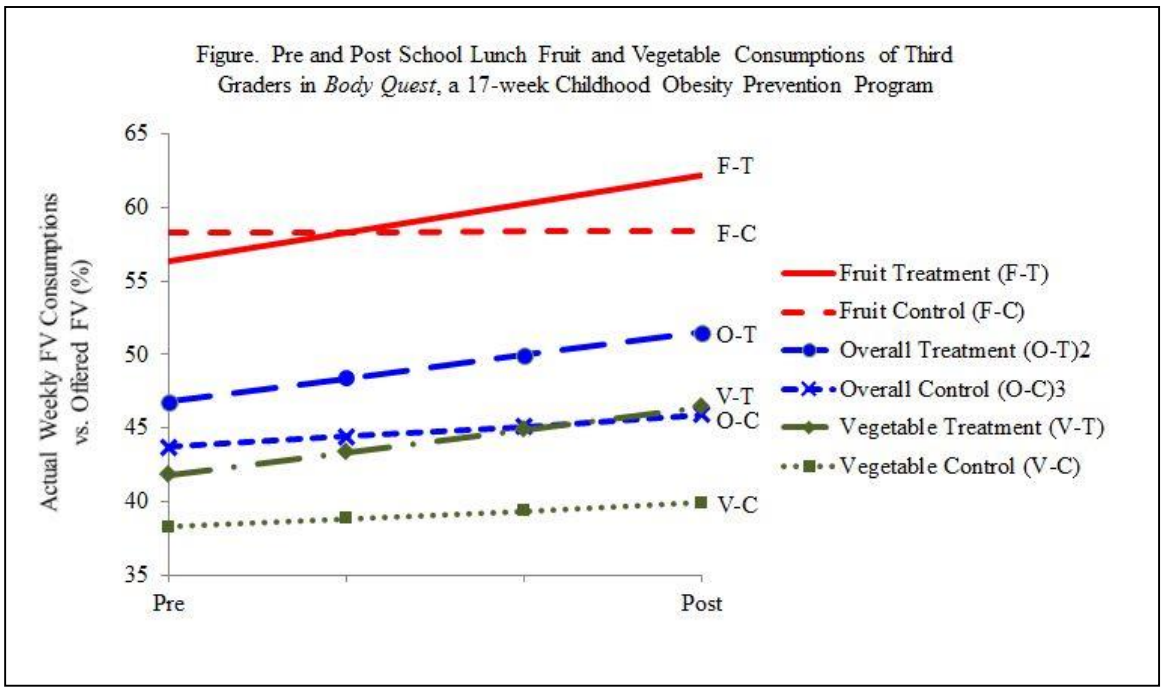
Only FV information from the W4L checklist was analyzed. Fruits were collapsed into one category, as were vegetables. Changes in student FV consumption were analyzed using a repeated measures ANCOVA using covariates of gender, race, Fresh Fruit and Vegetable Program and pre FV consumption at Week 17. Changes were examined within and between groups. Data were first analyzed by combining FV consumed at school lunch during the pre and post five-day periods with teachers nested within conditions for post analysis to minimize variability of classroom environment. Thereafter, changes in vegetables and fruits were analyzed separately using covariates of race and Fresh Fruit and Vegetable Grant. Upon analyzing fruits and vegetables separately, analysis included teachers nested within conditions.

Data are reported as a percentage using the number of self-reported FV consumed relative to the number of FV offered through the School Lunch Program for a five-day period for both pre and post.

Significant Findings and Conclusions of Body Quest

Upon analyzing combined FV consumption, two significant findings were documented (Figure). First, treatment students showed a significant ($P < .05$) increase in FV consumption from pre to post [$F(1, 1162) = 5.107$, $\eta 2 = 0.004$]. For control students, FV consumption from pre to post remained constant [$F(1,1164) = 0.451$]. Second, treatment students had a significantly ($P < .05$) higher consumption of FV at post compared to control students [$F(1, 130.68) = 5.30$, $\eta 2 = 0.039$]. At pre, FV consumption for both treatment and control students were not significantly different [$F(1, 158.22) = 0.686$].

Upon analyzing vegetable and fruit consumptions separately, only vegetable consumption showed significant changes (Figure). When compared to control students, treatment students had significantly ($P < .05$) higher vegetable consumptions from pre to post [$F(1, 1163) = 7.524$, $\eta 2 = 0.006$]. Treatment students had a significantly ($P < .05$) higher consumption of vegetables at post compared to control students [$F(1,130.68) = 8.64$, $\eta 2 = 0.061$]. At pre, vegetable consumption for both groups was not significantly different [$F(1, 158.22) = 3.387$].



BQ was successful in increasing FV consumption in a third grade population. Although change was moderate, the youth did adopt a weight management behavior. Not only did FV consumption increase by the end of the program, but most of the increase was due to vegetable intakes. These findings highlight that BQ can motivate a younger population to eat less palatable foods such as commonly-served vegetables available through the school lunch program.

During FY13, one of the most unexpected outcomes of BQ has been the "value added" to existing and new partnerships. The strengthening of existing partnerships is due to the high-quality of BQ and that it is addressing an escalating problem in Alabama. Hence, it is a very visible program and is in high demand to Alabama's youth through public schools. In addition, new partnerships have been developed with other departments at Auburn University due to the technology aspects of BQ. Some of the organizations/personnel working synergistically to ensure BQ success included:

(1) school systems [school administration, Child Nutrition Program personnel and school teachers]
(2) parents as they must give written consent to allow their child to participate in BQ and are provided take-home educational materials

(3) Auburn University [Extension System administration, Extension Communications and Extension 4-H Program, Department of Computer Science and Software Engineering, Information Technology departments and the Department of Nutrition, Dietetics and Hospitality Management]

BQ is beneficial to SNAP-Ed and the Cooperative Extension System. For SNAP-Ed, BQ was effective with a young, at-risk audience. For Extension, BQ highlights a successful program that can be implemented in a real-world setting.

Nutrition Education Program in Action

Actions and Activities

During Fiscal Year 2013 (October 1, 2012 – September 30, 2013), Auburn University NEP maintained 24 nutrition educators conducting NEP education in 47 rural counties in Alabama. Each NEP educator except one had a two-county responsibility. The primary audiences for NEP education were adult SNAP recipients and applicants in county food assistance offices, and youth of SNAP households through school-based programming.

In order to reach approved audiences, nutrition education was provided as a result of collaborative efforts with multiple agencies (below). These agencies have signed Memorandums of Understanding with NEP.

* SNAP Offices
* Public Housing
* Food Banks
* Community Action Agencies
* Head Start
* Mental Health Group Homes
* Summer Food Service
* Boys and Girls Clubs of Alabama
* Alabama Department of Education
* Farmers Market Authority

Nutrition education was taught using direct and indirect teaching methods in group classes, one-on-one sessions, print materials, iPad apps and through exhibits. Curricula from government and public sources are used (below), and are targeted for food assistance clientele – some for youth and others for adults. Only curricula that are based on a learner-centered approach that engage an audience are used.

* Eat Smart, Live Strong
* Eat Smart, Play Hard
* Body Quest: Food of the Warrior
* Little D's Nutrition Expedition
* Arianna's Nutrition Expedition
* Loving Your Family, Feeding Their Future
* Power of Choice
* OrganWise Guys
* Show Me Nutrition
* Take Charge of Your Health

Viability of SNAP-Ed Education in Alabama

The statewide goal to increase fruit and vegetable consumption was emphasized throughout NEP education to SNAP recipients. This means that food items in shopping carts of SNAP recipients comply better with the *MyPlate* guidelines and were purchased at bargain prices because of direct

and indirect education by NEP educators. The impact of this programming goes beyond the contacts listed as these individuals feed their children and other family members.

Direct education was conducted in 47 rural counties throughout Alabama in FY13. Direct education is defined as interventions where a participant is actively engaged in the learning process with an educator and/or interactive media. In addition, direct education allows for individual information to be obtained about participants. Direct education is reported in two methods. First, unduplicated counts of participants are recorded. Second, contact data (duplicated count) is also tracked throughout the fiscal year.

In Alabama, 40,633 individuals (unduplicated count) were provided direct education through SNAP-Ed activities in FY13. Of these contacts, 33% (13,432) were youth and 67% (27,201) were adults; 68% (27,695) were female.

In FY13, 85,846 contacts were made through direct education in SNAP-Ed activities. Of these contacts, 68% (58,645) were made with youth and 32% (27,201) were made with adults. This is in contrast to unduplicated direct contacts contact numbers as series programs are conducted exclusively with youth. Moreover, 58% (49,888) of these 85,846 contacts were females.

All direct education was provided as either a single program or as a series programs. More than 13,000 single programs and more than 150 series programs of 10 or more lessons were provided in FY13.

Indirect contacts also were captured through NEP reporting. Indirect education is defined as the distribution of information and resources, including any mass communications, public events and materials distribution that do not meet the definition of direct education. In FY13, 1,241,520 individuals were reached through community events, nutrition education articles, TV and radio PSAs, fact sheets and exhibits.

NEP Educators Embrace Technology

During FY13, NEP educators embraced the technology aspects of BQ (iPads, clickers and *What's for Lunch*) and NEP (contact reporting).

***iPads*:** BQ was technology-driven by using iPads as the pedagogical vehicle. County educators have a mobile iPad laboratory that they take into each classroom to teach BQ. Students learn nutrition education from their favorite BQ characters as they interact directly with apps containing direct narrative

and gaming. Educators are responsible for managing iPads, including software updates, app updates and routine maintenance.

Clickers: Clickers were used to electronically collect student responses to evaluation questions and transfer these responses to NEP state staff. Clickers have many advantages. For students, clickers provide an easy, confidential and engaging way to "take a test." For BQ educators, clickers have saved untold amounts of money in terms of time because educators do not have to "grade the test." Detailed clicker instructions, *Clicker Instructions*, were developed for county educator use.

What's for Lunch: Data from the *What's for Lunch Student Form*s were entered by NEP educators into spreadsheets on shared network space. These extensive spreadsheets required significant understanding of spreadsheet use, data entry, file management and other technology-based skills needed to work in an electronic environment. Protocols for this procedure were found in the *What's for Lunch Directions* manual.

***EARS Data Reporting*:** NEP educators are required to electronically report all data necessary for the federal Education and Administrative Reporting System (EARS) report, including contact numbers, demographic data, series and single program numbers and indirect contact information. This electronic reporting uses multiple spreadsheets that are linked to overall assessments of data.

Fiscal and Human Resources

NEP Projects and Effect of the American Tax Payers Relief Act of January 2013

NEP through Auburn University held the contract for statewide SNAP nutrition education efforts. In the beginning of FY13 in Alabama, NEP involved four projects defined by geographical location which are ultimately reflected by organization. The four projects were:

- Auburn University, Alabama Cooperative Extension System
- Alabama A&M University, Alabama Cooperative Extension System
- Mobile County Health Department
- Alabama Department of Public Health

In January 2013, the American Tax Payers Relief Act was enacted. This legislation resulted in a 28% reduction nationally in SNAP-Ed. Each of the four projects in Alabama were affected by the 28% decrease, but the Mobile County Health Department couldn't sustain this decrease and withdrew from NEP.

At Auburn University, the 28% reduction had a definite effect on NEP direct education. Initially, NEP was to expand NEP direct education, but was unable to with the reduction.

Human Capacity Building

NEP builds human capacity through: (1) creation of jobs for 24 NEP educators in rural areas and 3 at the state staff level and (2) several part-time individuals for specific job duties.

NEP is committed to training and professional development for all employees.

- Monthly comprehensive training was provided as needed by statewide teleconferences. These training sessions were used to provide updated subject matter content, civil rights training and administrative functions. By utilizing teleconferences, costs are kept to a minimum by avoiding travel expenses.
- A 3-day annual face-to-face in-service meeting was designed and conducted for all NEP educators. The main topic this year was training for *Body Quest*. In addition, a 2-day face-to-face meeting was held to discuss changes in *Body Quest* following analyses of FY13 school-based data.

Nutrition Education Program Educators

Angie Woods	Randolph and Chambers Counties
Annette Casteel	Franklin and Winston Counties
Carolyn Rothschild	Monroe and Wilcox Counties
Charity Battles	Chilton and Bibb Counties
Chasity Little	Jackson and DeKalb Counties
Danielle McGrew	Washington and Clarke Counties
Debbie Beverly	Conecuh and Covington Counties
Demetrius Scott	Butler and Lowndes Counties
Dominguez Hurry	Bullock and Macon Counties
Emma Thornton	Cullman and Marshall Counties
Emma Anne Hallman	Marion and Walker Counties
Gladys Blythe	Dallas and Perry Counties
Helen Melton	Hale and Greene Counties
Kathy Johnson	Lamar and Fayette Counties
Lea Huddleston	Calhoun County
Lisa Wood	Pike and Crenshaw Counties
Loretta Carr	Marengo and Choctaw Counties
Mary Shewmaker	Cherokee and Cleburne Counties
Meaghan Robertson	Clay and Talladega Counties
Mozelle Dixon	Pickens and Sumter Counties
Sheila Dorriety	Geneva and Coffee Counties
Sue Pemberton	Tallapoosa and Coosa Counties
Tawnya Kirkland	Barbour and Henry Counties
Velma Dowdell	Lee and Russell Counties

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ALABAMA COOPERATIVE Extension SYSTEM

Alabama A&M and Auburn Universities

USDA is an equal opportunity provider and employer. This material was funded by USDA's Supplemental Nutrition Assistance Program – SNAP, which provides nutrition assistance to people with low income. It can help you buy nutritious foods for a better diet. To find out more, contact a county Department of Human Resources office.

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www.BodyQuest.aces.edu
www.aces.edu/nep

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