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## Family Nutrition Education Program in Missouri

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### **Abstract**

The family Nutrition Education Program (FNEP) is a federally funded program that reached limited resources audiences of all ages; it is a multifaceted program focusing on behavior change and the adoption of habits that will improve health with the ultimate outcome to prevent chronic disease and maintain a quality of life into old age. Lessons in the different curricula include nutrition, food preparation, and physical activity. Through evaluation and outcome data participants improve in all areas. This presentation will highlight how physical activity is incorporated into nutrition and health lessons and the outcome data providing it influence behavior change. We use recommendations from the United State Department of Agriculture (USDA) to build materials and activities into our curriculum. All or our activities are age appropriate base on the expertise and advisement of our Youth Development faculty and our Nutrition and Exercise Physiology faculty. The work we do collectively impact lives of Missourians and is recognized at the national level.

*Keywords:* nutrition education, physical education, healthy lifestyle education

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## Introduction

The University of Missouri Family Nutrition Program delivers integrated nutrition, food preparation and physical activity education to over 400,000 low-income Missourians annually. It has been shown that integrating physical activities throughout the educational program results in greater behavior change by participants, as well as by secondary audiences, such as classroom teachers who observe the youth programming. Integration of physical activity not only enhances learning (McCracken, 2002) but also allows youth and adults to engage in physical activities in a safe, non-threatening setting.

## Background

The Family Nutrition Program (FNP) is a federally funded program that reaches limited resource audiences of all ages. It is a multifaceted nutrition and physical activity program focused on positive behavior change that will improve lifelong health and quality of life. FNP has been delivered since 1993, by The University of Missouri Extension nutrition educators and faculty in each of the state's 114 counties, and the city of St. Louis, Missouri. The program, funded through the USDA Food and Nutrition Service Supplemental Nutrition Assistance Program (USDA SNAP-Ed), targets those receiving, and eligible to receive, SNAP benefits (formerly Food Stamps). The program utilizes age appropriate, interactive curricula based upon the United States Department of Agriculture (USDA) Dietary Guidelines. Each curriculum integrates nutrition, food preparation, and physical activity throughout each lesson. All activities are age appropriate. Activities include movement in classrooms, using pedometers, walking programs, strength training programs, and development and implementation of a physical activity pyramid. Each student also receives a take home parent newsletter at the end of each lesson. These newsletters reinforce the classroom education and encourage parent-child repetition of the classroom activities or reinforcement of the educational principles.

Missouri demographic changes are similar to the entire country, in that immigrants from Latin America comprise the fastest growing segment of the state population. This Hispanic population tends to be younger, with the average age being 26 years. It is estimated that 32% of Hispanic families fall below the poverty level. The median family income for Hispanic households is approximately 25% less than that of Whites (\$36,762 compares to \$47,914). Moreover, a larger percentage of Hispanics that are in poverty are families with children, compared with Whites and Black population. Nearly one-third of all Hispanics do not have a high school diploma. Hispanic mothers have lower education levels than both White and Black mothers. Also, 30% of Hispanic mothers living in Missouri had less than ten years of education, compared to just 5% of non-Hispanic mothers (Walker 2007).

The first report on Missouri Hispanic health status, *Minority Health Disparities in Missouri, 2009*, compares the health status of Missouri's Hispanic residents to the health status of both Black and White residents. According to this report, the Hispanic population in Missouri is very similar to the non-White population in terms of health measures. At the same time, these indicators have been linked to the higher poverty rate experienced by Hispanics.

The 2011 *Healthy Americans* report named Missouri as the 12th most obese state in the country. Data shows that the rate of diabetes in the U.S. is directly proportional to both the education and income levels of the population. Racial and ethnic minorities, and those with less education or income, have the highest overall obesity rates. Adult obesity rates in the Missouri population showed 38.2% for Blacks, 29% for Hispanics, and 27.5% for Whites. Nearly 33% of adults who did not graduate from high school were obese compared to 2.5% of adults who had graduated from college or technical colleges. More than 33% of adults who earned less than \$15,000 per year were obese compared to 24.6% of adult who earn \$50,000 or more per year.

A report on a 25-year long study, showed research on trends in nutrition intake and chronic conditions among Mexican-American Adults in the

USA. The report stated that the overall total energy and carbohydrate intake among Mexican-American adults had increased, while the percentage of kilocalories from dietary total fat and protein intake had decreased. During the same time period the prevalence of diabetes and obesity among Mexican-American adults increased and U.S.-born Mexican-American adults were consistently more likely to be obese compared to those born outside the country. At this time our program in Missouri doesn't track this type of demographic information. These national findings recognize the link between diet and chronic health conditions (Fryar 2012).

This paper will highlight how physical activity incorporated into nutrition and health lessons, provides positive influences on lifelong health. Evaluation and outcome data indicate improvement in all focus areas.

### **Methods**

To combat the weight and obesity issue of Missouri's low-income children, the Family Nutrition Program (FNP) incorporates various physical activities with nutrition lessons. Youths inherently tend to enjoy movement and physical activity. Nutrition educators are effective in motivating and encouraging physical activity when they incorporate appropriate activities in their teaching (Copeland, 2006). All activities utilize the MyActivity Pyramid developed by Ball, Gammon and Schuster (2006).

The MyActivity Pyramid is a graphic illustration designed to depict each of the four major types of physical activities. It was designed to help children understand the appropriate amount of each physical activity. It allows for moderate and vigorous physical activity and provides for muscle fitness and flexibility activities. The different levels of the MyActivity Pyramid are as follows:

- Level 1: Everyday or Lifestyle Physical Activity
- Level 2: Active Aerobics and Recreational Activities
- Level 3: Exercises for Flexibility and Muscle Fitness
- Level 4: Inactivity or Sedentary Living

The FNP curriculum incorporates short intervals of physical activity within the nutrition lesson. Twenty minutes is optimal for a learning segment, followed by two to five minutes of movement (Sousa 2001). Examples include: 1) doing a specific movement when a word from a book is read; 2) playing games that allow students to stand up and move around the classroom; 3) use of props, including scarves and foam frisbees; 4) chair stretches and isometrics; and dance moves to engaging music.

### **Results**

In FY2011, 433,152 Missourians participated in the Family Nutrition Program. Of the total participants, 217,658 received direct education consisting of an average of eight lessons or contacts. The predominant delivery method was face-to-face interactive education. Adults were also reached through newsletters and educational materials available in English and Spanish. Educators who are bilingual and indigenous of the audience are employed in areas with a high Spanish-speaking population.

Of the 204,342 youth participants, classroom teachers reported 91% of youth were more aware of nutrition and 62% made healthier meal and snack choices. As a result of the program, 52% of teachers indicated that they made healthier meal and snack choices and 87% modeled this in front of their students. Seventy-six percent of the students were observed as being more willing to try new foods, an action that has been shown to be the first step to a healthy diet. In addition, 62% of youths increased their daily amount of physical activity (University of Missouri, Family Nutrition Program Report, 2011). Hispanic youths comprised four 4% of total youth participants.

In FY2011, 13,316 adults received direct education through the Family Nutrition Program. Approximately 1% of adults indicated they were Hispanic. Educational classes were delivered where adults lived, worked, and gathered, such as public housing authorities, service agencies, and food pantries. As a result of the FNP classes, 60% of adult participants reported that they think about making healthy food

choices when deciding what to feed their families. Seventy-five% of participants utilized nutrition facts when purchasing food. Fifty-three percent of adults consumed more than one vegetable and 64% consumed more than one fruit each day. In addition, 52% of adult participants were physically active for 30 minutes or more each day.

### Conclusion

As the Hispanic population continues to increase in Missouri, with many of the states individuals and families lacking education and earning potential, it is imperative that strong nutrition and health educational programs be implemented to prevent obesity and related diseases. Data supports the strong link between diet-education and health among the Hispanic population (Fryar 2012).

As shown in the Family Nutrition Education Programs at the University of Missouri, integration of nutrition and physical activity principles into the same educational lesson will result in the adoption of positive behavior and increase the likelihood of improved lifelong health. Although the results stated above reference the 2011 program year, the results are indicative of the program's 18-year history. The Hispanic population remained a small percentage of the total population but these participants showed similar results to their non-Hispanic counterparts.

The Family Nutrition Program continues to seek out the Hispanic audience throughout the state. Given the increased Hispanic population it is estimated that the number of Hispanic participants and bilingual educators should increase in the coming years. It is our recommendation that the audience focus on the implementation of more nutrition and physical activity programs and that further evaluation to be conducted in order to determine long-term increases in health benefits.

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