Ecological Variables and Eating Behaviors in Early Adolescent African American Girls and Their Parent

BY

MONIQUE A. COLLINS

B.A. DePaul University, 2000
M.S. DePaul University, 2004

THESIS
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Defense Committee:
Barbara Dancy, PhD, RN, FAAN, Chair and Advisor, College of Nursing
Mi Ja Kim, PhD, RN, FAAN, College of Nursing
Agatha Gallo, PhD, RN, FAAN, College of Nursing
Constance Dallas, PhD, FNP, College of Nursing
Karyn Holm, PhD, RN, FAAN, DePaul University
This thesis is dedicated to my husband, Morris Reed, my parents Larry & Barbara Collins and Ronald & Jacqueline Reed and my children, Kareem, Miles, Tyler and Morgan without whom it would have never been possible. I love you and thank you for all that you have given me- you are the reason that I am. To the memory of my grandparents: Maggie Thomas and Larkland and Viola Teape- I will continue to walk in your footsteps honoring your commitment to serve others.
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“I will bless the Lord at all times: his praise shall continually be in my mouth. My soul shall make her boast in the Lord: the humble shall hear thereof, and be glad.” Psalm 34:1-2, KJV

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LIST OF ABBREVIATIONS

BKFFQ  BLOCK KIDS 2004 FOOD FREQUENCY QUESTIONNAIRE
BMI   BODY MASS INDEX
EHQ   EATING HABITS QUESTIONNAIRE
FJVP  FAT, JUICE, AND VEGETABLE PRACTICES
FSUB  FAT SUBSTITUTIONS
HAES  HEALTH AT EVERY SIZE MOVEMENT
IOM   INSTITUTE OF MEDICINE
LFP   LOW-FAT PRACTICES
MMOD  MEAT MODIFICATIONS
NHANES NATIONAL HEALTH AND NUTRITION EXAMINATION SURVEY
PLFP  PARENT LOW-FAT PRACTICES
SES   SOCIO-ECONOMIC STATUS
SNAP  SUPPLEMENTAL NUTRITION ASSISTANCE PROGRAM
USDA  UNITED STATES DEPARTMENT OF AGRICULTURE
SUMMARY

Few studies have been conducted that explore the relationship between African American urban early adolescent girls’ and their parents’ eating behaviors (frequency, portion and types of foods selected for breakfast, dinner and snack). Because early adolescence is a critical period in a female’s life for predicting adolescent and adult behavior, it is important to explore the relationship among African American early adolescent girls’ and their parents’ eating behaviors. This is the first known study to report both the adolescent’s and parent’s perspective of whom they ate breakfast and dinner with during the week and weekend. Our study found no correlation between adolescent’s eating family meals with their parent and healthy food choices. Instead, our study found that a better predictor of healthy or unhealthy food choices was the food choices of the parent. We found that early adolescent African American girls and their parents do not frequently skip breakfast or dinner and they frequently eat at home yet they still have obesity rates higher than the national average. Results from this study suggest that it may be more beneficial to focus efforts on changing the types of foods that girls and their parent are eating while at home because home was the common source of food acquisition for breakfast, dinner and snacks.
I. INTRODUCTION

A. Statement of the Problem

The rising rate of obesity in early adolescent African American girls in the United States is reaching epidemic proportions (Ogden et al., 2010). Currently, over one third (31.7%) of all children and adolescents from 2-19 are overweight, with 16.9% of these children and adolescents classified as obese (Ogden et al., 2010). Overweight is defined as BMI ≥ 85th percentile and obese is BMI ≥ 95th percentile (Ogden & Flegal, 2010). Body mass index (BMI) is calculated as a child’s weight in kilograms divided by their height in meters$^2$ or weight in pounds multiplied by 703, divided by their height in inches. For example, a 10 year old girl with a BMI of 21 is considered overweight, while a BMI of 24 is considered obese (Ogden & Flegal, 2010). People of low socio-economic status (SES) and minorities are disproportionately affected by obesity (Wang & Zhang, 2006). The United States 1999-2004 National Health and Nutrition Examination Survey (NHANES) data showed differences in the prevalence of overweight and obesity among ethnic groups, especially girls as they progress through older childhood and adolescence (Ogden et al., 2006). In 2007-2008, African American (39.5%) adolescents aged 12-19 years were at a higher risk than their White counterparts (31.3%) of being overweight and obese (Ogden et al., 2010). Overweight and obesity are as much a gender problem as an ethnic problem: 46.3% of African American adolescent girls versus 33.0% of African American boys were overweight, and 29.2% of African American adolescent girls versus 19.8% of African American adolescent African American boys were obese (Ogden et al., 2010).
Illinois is tied with Louisiana for the 4th highest rate of obese youths (ages 10-17) with Mississippi, Georgia and Kentucky respectively having the highest rates of obesity for youth in the United States (Trust for America’s Health ‘F is for Fat’, 2010). Margellos, Silva and Whitman (2008) reported that children in some low income minority communities in Chicago, Illinois, a Midwestern, urban city, were more likely to be obese than other children in Illinois or the nation. They surveyed six low-income predominantly African American and Mexican American communities in Chicago and found that 58% of children aged 2-12 years old were obese. However, 56-90% of their caretakers viewed these children as underweight or at the right weight (Margellos, Silvan & Whitman, 2004).

Birch and Fischer (1998) described eating behaviors as children’s food preferences, food exposures, and observations of other’s eating choices. Other people observed by the children include their parents, other adults, peers and siblings. A positive association existed between adolescents’ eating behaviors and their parents’ eating behaviors, though studies to date have had low African American representation (Oliveria et al., 1992; Perusse et al., 1988; Rossow & Rise 1994). Among African Americans, positive associations have also been found in adolescent obesity and fast food consumption, breakfast skipping, getting extra money to buy snacks and not eating meals with family members (Cullen et al., 2002; Neimeier et al., 2006). For low income African Americans, being female and receiving ≥ US $2 per day pocket money were significant predictors of obesity because the girls use money to buy unhealthy foods (Wang et al., 2007). Befort et al. (2006) found that African American adolescents have a higher intake of fat than do White adolescents; while Siwik and Senf (2006) found that low-income, African-American families eat family meals together less frequently than other racial and SES groups.
Few studies have been conducted that explore the relationship between low income African American urban early adolescent girls’ and their parents’ eating behaviors (frequency, portion and types of foods selected for breakfast, dinner and snack) (Wang et al., 2009). Because early adolescence is a critical period in a female’s life for predicting adolescent and adult behavior it is important to explore the relationship among African American early adolescent girls’ and their parents’ eating behaviors.

B. Purpose of the Study

The purpose of this study was to explore eating behaviors of early adolescent African American girls between 10 -12 years old and their parent and to determine what relationships exist between adolescent girls’ and their parent’s eating behaviors.

C. Research Questions

This dissertation aims to answer the following research questions:

1. Do early adolescent African American girls eat with their parent?
   a. How often do early adolescent African American girls eat breakfast with their parent?
   b. How often do early adolescent African American girls eat dinner with their parent?
   c. How often do early adolescent African American girls eat snacks?
   d. Where do early adolescent African American girls eat breakfast, dinner and snacks?

2. How many vegetables, grains, protein, dairy, fruits/ fruit juices, calories and fats, oils and sweets do early adolescent African American girls eat?
3. Do parents eat with their early adolescent African American girls?
   a. How often do parents eat breakfast with their early adolescent African American girl?
   b. How often do parents eat dinner with their early adolescent African American girls?
   c. How often do parents eat snacks?
   d. Where do parents of early adolescent African American girls eat breakfast, dinner and snacks?

4. How many vegetables, grains, protein, dairy, fruits/fruit juices, calories and fats, oils and sweets do parents of early adolescent African American girls eat?

5. What is the relationship between the self-reported eating behaviors of early adolescent African American girls and their parent?

D. Significance of the Study

Few studies have been conducted to describe eating behaviors of low income early adolescent African American girls and their parents. This study compared parents and adolescent girls across a large urban minority community to assess whether there was a relationship between their eating behaviors. By examining the eating behaviors of adolescent girls and their parent, this study can build a body of knowledge to better understand how to shape policies and programs for improving obesity reduction outcomes among early adolescent African American girls.
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<th>Definition</th>
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<td>African American</td>
<td>Self-identified as African American (non Hispanic)</td>
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<tr>
<td>Eating Behaviors</td>
<td>Frequency and portions of 77 food items consumed the last week, as recorded with the Adolescent Food Frequency Questionnaire measuring the frequency of consumption of breakfast, dinner, fast food, snacks and eating companions.</td>
</tr>
<tr>
<td>Early Adolescent Girl</td>
<td>Self reported female, age 10-12 years old</td>
</tr>
<tr>
<td>Parent</td>
<td>The adult who is the biological parent or surrogate parent living in the household of that adolescent, who, in the opinion of the adolescent, is acting in a parenting role for the adolescent, and hereafter referred to as a parent</td>
</tr>
<tr>
<td>Snacks</td>
<td>Foods eaten outside of breakfast, lunch and dinner</td>
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II. CONCEPTUAL FRAMEWORK AND RELATED LITERATURE

A. Conceptual Framework

The modified version of the ecological model of childhood overweight was used as the conceptual framework for this study. This framework builds on the ecological model of childhood overweight described by Davison and Birch (2001). Davison and Birch (2001) developed the ecological model of childhood overweight from Bronfenbrenner’s (1979) ecological model. Ecological models of human interaction and development can be used to study complex community problems that affect adolescent obesity and other health disparities. These models allow researchers to study the components of problems and to understand how problems can be addressed (Reifsnider, Gallagher & Forgione, 2005). The ecological model describes health behaviors as affecting and being affected by environmental systems at multiple levels.

1. Concepts and Definitions

The ecological model of childhood overweight developed by Davison and Birch (2001) focuses specifically on characteristics that could affect an individual child's weight status in relation to the multiple environments in which that child is involved (see Figure 1). There are four major levels of the model with the child’s weight status as the central component. Demattia and Denney (2008) reviewed the ecological model of childhood overweight and found that it is useful in describing the effects of society, family, and individual factors that explain, intensify or compound the causes of childhood obesity.

Few studies have tested the ecological model of childhood overweight in African American early adolescent girls. Davison and Birch (2001) developed parts of the model in
a study of 197 five-year-old girls and their parents in central Pennsylvania with non-Hispanic white families. One hundred and ninety-two parents were reassessed two years later when their girls were seven years old. The mother’s mean age was 35 and the father’s mean age was 37. All parents were employed and two-thirds reported education level higher than high school diploma. The researchers assessed the girls’ and parents’ weight status, dietary intake and physical activity and found that the most successful model of predicting an increase in the girls’ weight status were the mothers’ change in body mass index (BMI), fathers’ energy intake, fathers’ enjoyment of activities, and girls’ percentage of dietary energy intake from fat (Davison & Birch, 2001).

Figure 1. Ecological model of childhood overweight (Davison & Birch, 2001)
A modified ecological model of childhood overweight was used in this study (see Figure 2). This model focused on the food aspects of the model as it relates to early adolescent girl and parent eating behaviors. The first system includes the early adolescent girl's gender, age, and dietary pattern. The next system that influences a early adolescent girl's weight status is the family environment, including the parents’ dietary intake, parents’ weight status, and the parents’ giving the early adolescent girl pocket money for snacks (foods eaten outside of breakfast, lunch and dinner) (Demattia & Denney, 2008). The ecological model of childhood overweight forces us to take into account the larger community in which the child lives. The community factors (the third system) include ethnicity and socioeconomic status (Davison & Birch, 2001).

Figure 2 illustrates how early adolescent girl, family and community factors contribute to the early adolescent girls’ weight status. The relationships among these factors are affected by and affect the early adolescent girl’s weight status reciprocally. The relationships are non-competing and are illustrated within the framework. Table II shows a comparison of the Davison and Birch’s (2001) ecological model of childhood overweight and the modified version of the ecological model of childhood overweight.

There are three key assumptions of the modified version of the ecological model of childhood overweight. The first is that the early adolescent girl and environment mutually influence each other and are interrelated within the embedded levels of the ecological framework. The second is that the environment consists of both physical and family environments and their interaction influence a child’s eating and activity behaviors, thus
influencing the early adolescent girl’s weight status. The third is that the environments can be actual or perceived (Glanz, Rimer & Lewis, 2002).

Figure 2. Modified version of Davison and Birch’s (2001) ecological model of childhood overweight

B. Childhood Overweight- A Public Health Crisis

In a study that reported rates of overweight and obesity in the United States, Ogden et al. (2006) found that from 1999 to 2004 the percentage of obese children and adolescents ages 2-19 increased to 17.1% with 19% of children ages 6-11 being obese and 16.5% of youth overweight (Ogden et al., 2006). Along with the increase of BMI, the compounding factor of increase in abdominal obesity, is correlated to an increased risk of type 2 diabetes and cardiovascular
disease. From the 1988 to the 1999 NHANES survey there was a 69% increase in abdominal waist circumference in girls (Li et al., 2006). The highest prevalence of body mass index is consistently seen in African American and Mexican American youth.

**TABLE II**

**KEY CONCEPTS AND DEFINITIONS OF THEORETICAL VARIABLES**

<table>
<thead>
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<th>Ecological Model of Childhood Overweight Measure</th>
<th>Modified version of ecological model of childhood overweight measure</th>
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<tr>
<td><strong>Level I:</strong> Child Weight Status</td>
<td>Child Weight Status</td>
<td>Early Adolescent Girl’s weight Status</td>
</tr>
<tr>
<td><strong>Level II:</strong> Child characteristics and child risk factors</td>
<td>Gender, age, dietary intake, sedentary behavior, physical activity, family susceptibility to weight gain</td>
<td>Early Adolescent Girl’s gender, age, dietary intake</td>
</tr>
<tr>
<td><strong>Level III:</strong> Parenting styles and family characteristics</td>
<td>Child feeding practices, types of foods available in the home, nutritional knowledge, parent dietary intake, parent food preferences, parent weight status, parent encouragement of child activity, parent activity patterns, parent preference for activity, parent monitoring of child TV viewing, family TV viewing, peer and sibling interactions</td>
<td>Parent dietary intake, parent weight status, pocket money given for snacks (foods eaten outside of breakfast, lunch and dinner)</td>
</tr>
<tr>
<td><strong>Level IV:</strong> Community, demographic and societal characteristics</td>
<td>Ethnicity, school lunch programs, work hours, leisure time, accessibility of recreational facilities, accessibility of convenience foods and restaurants, family leisure time activity, school physical education programs, crime rates and neighborhood safety, socioeconomic status</td>
<td>Ethnicity, socioeconomic status</td>
</tr>
</tbody>
</table>
Early adolescent overweight African American girls have a 50-70% chance of becoming overweight and obese adults (USDHHS, 2001). As overweight and obese adults, adolescents are at increased risks of acquiring obesity-related diseases that are associated with higher rates of mortality, such as: hypertension, coronary heart disease, type 2 diabetes, osteoporosis, dyslipidemia, stroke, sleep apnea, some cancers (endometrial, breast, colon) and gall bladder disease (Dietz, 1998). The economic consequences of obesity are alarming. In 1979, the medical costs associated with child and adolescent overweight were $35 million. In 1999, just 20 years later, the costs rose to an alarming $127 million (in constant dollars) (Wang & Dietz, 2002). The federal poverty level for a family of four with two children in 2007 is defined as a yearly income of $20,650. In 2007, 60% of all African American children were reported to live in poverty-stricken families (National Center for Children in Poverty, 2007). Studies have shown a correlation between adolescent overweight and neighborhood variables such as access to quality healthy food, fast foods and urban minority communities (Block & Kouba, 2006). Davison and Birch (2001) suggest there are multiple social influences on eating behaviors in urban low-income African American communities including parental and community factors as described in Figure 1.

Although there is a clear negative relationship among socioeconomic status (SES) (e.g., parental income, parental education and occupation status) and overweight and obesity in adults, the relationship is weaker and less consistent in children (Sobal & Stunkard, 1989). Data are conflicting regarding the effect of family or parent socioeconomic status and overweight in children. Sobal and Stunkard (1989) found that the SES of the neighborhood may be a better predictor of overweight in children than the SES of the family.
Obesity in low income African American girls is still a significant health problem. One out of four low income African American girls is obese; this is three times the rate in 1970. However, in 1970 only 2% of high income African American girls were obese: now that number has grown to one in three. Low income and high income African American girls are at the highest risk of obesity as compared to their White and male counterparts with comparable income status (Wang & Zhang, 2006; Gordon-Larsen, Adair & Popkin, 2003). Some reasons for this inconsistency include compounding factors that are difficult to separate by SES, such as: single mothers, non-working parents, non-professional parents, maternal education level, children unsupervised during after school hours, sedentary behavior and cultural attitudes about body weight (Strauss & Knight, 1999). Due to the obvious influences of personal, social and structural community environment contexts on child overweight and other health problems, the National Children’s Study began in 2009 with a longitudinal study of 100,000 children followed from conception to age 21 to understand the relationship of environment and overweight (Trasande et al., 2009).

Responding to the nation’s childhood obesity epidemic, the Institute of Medicine released Preventing Childhood Obesity: Health in the Balance (2005). In this report, it was concluded that the evidence available to date was insufficient to make a comprehensive assessment of the nation’s progress on fighting childhood overweight. It was also concluded that researchers should focus on short term efforts by creating a larger evidence base of knowledge to develop initiatives appropriate for various environmental and social settings (IOM, 2005).
C. African American Risk Factors for Overweight

In the past 30 years, African American youth age 6-17 have shown vastly larger increase in BMI and overweight and obesity prevalence as compared to their white counterparts. Studies have shown that low income families are at high risk of obesity, however, recent studies show that African American families at all income levels are at risk of adult obesity and childhood obesity (Wang & Zhang, 2006). The 2001 Surgeon General’s “Call to Action to Prevent and Decrease Overweight and Obesity” awakened the awareness of the increasing short and long term health and psychosocial consequences of overweight among youth. Daniels (2006) compiled prevalence estimates among youth for diseases which were previously thought of as adult diseases. He found the prevalence rates of “adult diseases” in children and adolescents as follows: hypertension (2-4%); atherosclerosis (50% fatty streaks, 8% fibrous plaques); dyslipidemia (5-10%); metabolic syndrome (4% overall, 30% among overweight); type 2 diabetes (1-15 persons/100,000 overall, almost all in overweight); obstructive sleep apnea (1-5%, 25% in overweight); non-alcoholic fatty liver disease (3-8%, 50% in overweight); and depression (3-5% in adolescents). The IOM (2005) report projects that the obesity epidemic may reduce the overall adult life expectancy gained over the past century.

D. Early Adolescence

Early adolescence presents a period of great change in one’s physical development and body size. The effect of puberty as a cause or consequence of obesity in early adolescence is not clear. Higher pre-pubertal BMI and other indicators of adiposity in early childhood have been associated with earlier maturation. In a study of girls from Pennsylvania, body fat was assessed at age five and larger increases of fat at age five were associated with early maturation by age
E. Adolescent’s Perceptions of Healthy Eating

Adolescents have identified problems with access, taste, social norms and marketing of healthy food as barriers to eating healthy food. Evans et al., (2006) used the social cognitive theory and ecological framework to improve their understanding through focus groups of the adolescent’s perceived outcome expectations, barriers, and strategies for healthful eating. The researchers conducted five focus groups with 48 adolescents (29 males and 19 females) at two middle schools and the Department of Recreation and Parks in a rural county in South Carolina. These locations were chosen because they serve a large proportion of children from low-income families. The school administration and the Recreation and Parks staff provided student rosters to the principal investigator of the study. All adolescents who fit the inclusion criteria were selected and placed on the “Eligible Student List.” Study inclusion criteria included eligibility for free or reduced lunch program, enrolled in sixth or seventh grade, and ages 10–14 years. Prior nutrition knowledge was neither an inclusion nor an exclusion criterion. Sixty-four adolescents were randomly selected from the “Eligible Student List” by using a random numbers table. After the students were selected, they were asked to voluntarily attend one of the focus group meetings. The 48 students who volunteered were mostly Black (81.3%), with 12.5% White, 2% Hispanic,
2% Asian/Pacific Islander, and 2% other. Most students lived with their mother and father (35%), or mother and other adults (25%). Thirty-five percent of mothers and 25% of fathers had some college-level education. In addition, 5% of mothers and 5% of fathers held professional degrees. Students received a gift certificate worth $10.00 as an incentive for participation (Evans et al., 2006).

These adolescents identified lack of availability of healthful food, bad taste of healthful food, social pressure to eat unhealthful food, unappealing look of healthful food and lack of variety of healthful food as some barriers to healthful eating. In response to strategies for healthful eating, adolescents identified the following approaches: better tasting and looking foods; more healthful options at home, school and when out with friends; and more emphasis from role models and peers to eat healthier foods (Evans, et al., 2006). Evans’ et al., (2006) study did not include the perspectives of the adolescents’ parents.

F. Obesity and Eating Behavior

If children are given various opportunities to try new foods without being forced to eat them, even if the child initially rejects the food, the food will eventually become a routine part of the child’s diet. Individual taste preference and portion control ideas begin to develop in children by age five and are influenced by previous experience with their parents (IOM, 2005). As they develop, early adolescents begin to make their own choices at school and in other settings away from home. Early adolescents influence the foods that the family purchase and consume. At this age, parents can promote healthful eating by making nutritious foods and encouraging family meal times. Project Eat surveyed middle school and high school students and found that children
that ate more family meals were more likely to eat breakfast, fruits, vegetables and dairy foods (Eisenberg et al., 2004).

G. Eating Foods Away From Home

In today’s society time is important because of the increased roles and responsibilities of working mothers and fathers trying to manage work, home and social responsibilities. The limited amount of “free” time has impacted the type and quality of healthy food choices that families make. Panitz (1999) conducted a national restaurant survey and found that 67% of American adults felt that eating in a restaurant was a better use of their time than cooking at home and cleaning afterwards. The cost of ready-to-eat and ready-to-heat food is currently at an all time low. For the first time nearly everyone in the household can afford low cost food (French et al., 2001; Sloan, 2003). The rate of working mothers outside the home and time spent outside the home has increased, while the rate of fathers working outside the home has decreased slightly, yet still remains high. Parents have shifted from meal preparation to meals of greater convenience (French et al., 2001), and the effects of time pressures are seen in working mothers’ reduced participation in meal planning, shopping, and food preparation (Crepinsek & Burstein, 2004). The food industry is meeting the growing family demands by improving packaging, creating longer shelf stability and creating more microwavable and short meal preparation time foods (IOM, 2005).

H. Snacking

A result or contributing factor of demand for convenience is the increased frequency of children and youth, snacking, deriving a large proportion of their one’s total daily calories from
energy-dense snacks (Jahns et al., 2001). At the same time, there has been a documented decline in breakfast consumption among both boys and girls, generally among adolescents (Siega-Riz et al., 1998) and in urban elementary school-age children as compared to their rural and suburban counterparts (Gross et al., 2004); further, children of working mothers are more likely to skip meals (Crepinsek & Burstein, 2004).

I. Skipping Breakfast

In the past 30 years there has been a decline in breakfast consumption among children and adolescents. The decline in breakfast consumption has been linked to an increase in the current prevalence of obesity and excessive energy intake (Berkey et al., 2003). Children and adolescents who regularly eat breakfast consume a lower percentage of energy from fat and eat snacks that are lower in fat than children who skip breakfast (Neimeier et al., 2006).

Neimeier et al. (2006) followed a nationally representative sample of 9,919 adolescents in the National Longitudinal Study of Adolescent Health. The study known as Add Health, was a seven year prospective study conducted in two waves. Wave I age range was 11-21 years and Wave II age range was 18-27 years. The participants were 66% White, 15% African American, 12% Hispanic, 4% Asian, and 2% Native American. The researchers assessed the correlation of skipping breakfast to BMI in these adolescents. The researchers found that those that skipped breakfast were more likely to be obese. In addition, African Americans and Native Americans consumed breakfast on fewer days than Whites and had higher rates of obesity at both time periods.

Since the 1980’s the United States Department of Agriculture (USDA) has developed and published food guides to assist the general public in making food choices. The USDA’s most recent food guidance system is MyPlate.gov which is a revision of the MyPyramid Food Guidance System. MyPlate.gov launched in June, 2011 and is currently being revised for children. MyPlate.gov changes the pyramid icon to a plate in an attempt to be consumer friendly and emphasize portion control. MyPyramid recommendations for food choices and portion sizes to assist the general population of the United States in making food choices based on gender and age (Britten, Marcoe, Yamini, Davis, 2006). The MyPlate.gov system has recommendations for servings of vegetables, grains, protein, dairy, calories, fruits/fruit juices, and fats, oils and sweets.

MyPyramid (2011) recommends that girls between the ages of 10-12 have:

- Two cups of vegetables per day. Vegetables can include dark green vegetables such as spinach and broccoli, orange vegetables such as carrots and sweet potato, starchy vegetables such as corn and white potatoes, and other vegetables such as cucumbers and celery. “Cups” of vegetables can include 12 baby carrots, two cups of raw leafy spinach, one medium potato, 20 French fries or one cup of raw sliced cucumbers. MyPyramid recommends that girls vary the type of vegetables they eat weekly to receive two cups of dark green vegetables, one and one half cups orange vegetables, two and one half cups starchy vegetables and five and one half cups other vegetables.
• Five ounce equivalents of grains per day (mostly whole grains). Grains can include
bagels, bread, cereal, cornbread, crackers, muffins, pancakes, popcorn, rice, pasta and
tortillas. “Ounces” of grains can include one mini bagel, one regular slice of bread,
one cup cereal flakes, one- 2 ½” x 1 ¼”x 1 ¼” piece of cornbread, five whole wheat
crackers, one- 2 ½” muffin, two- 3” pancakes, three cups popped popcorn, ½ cup
cooked rice, ½ cup cooked pasta, one- 6” corn or flour tortilla. Five ounce
equivalents of protein per day. Protein can include beef, pork, chicken, turkey, fish,
eggs, nuts, seeds, beans and peas. “Ounces” of protein can include 1 ounce lean beef
or pork, (one small hamburger equal to two-three ounce equivalents), one sandwich
slice of turkey, one can of tuna equal to three to four ounce equivalents, one egg, 12
almonds/ seven walnut halves equal to ½ ounce equivalent, ¼ cup black, kidney or
pinto beans. The recommendation is that most protein choices be from lean meats
and beans.

• Three cups of dairy per day. Dairy can include milk, yogurt, cheese and milk based
desserts. “Cups” of dairy can include: one cup of milk, one-eight ounce container of
yogurt, 1/3 cup shredded cheese, one and one half cup ice cream. MyPyramid
recommends that most dairy choices be fat-free or low-fat.

• One and one half cups of fruit and fruit juices per day. Fruits and fruit juices can
include: apple, applesauce, banana, grapes, strawberries, dried fruit (raisins, prunes,
apricots), and fruit juice. “Cups” of fruit include: ½ of a 3.25” apple, one cup
applesauce, one- 8”-9” banana, 32 seedless grapes, eight large strawberries, ½ cup of
raisins, prunes or apricots, or one cup of fruit juice. MyPyramid recommends fruit
choices be fresh/ frozen fruit or 100% fruit juice.
• Eat 1600 calories per day with 130 of those being discretionary calories.

Discretionary calories can include oils, fats and sweeteners. MyPyramid recommends no more than five teaspoons of oils and fats per day. Oils can include: vegetable oils (canola, corn, olive, peanut), margarine, mayonnaise, salad dressing, peanut butter, nuts and sunflower seeds. “Teaspoons” of oil can include: one tablespoon of vegetable oil equal to three teaspoons of oil, one tablespoon of margarine equal to two and ½ teaspoons of oil, 1 tablespoon salad dressing, two tablespoons peanut butter equal to four teaspoons of oil, one ounce nuts equal to three teaspoons of oil, one ounce of sunflower seeds equal to three tsp of oil. Other discretionary calories come from foods such as heavy cream, sour cream, butter, whole milk, cheddar cheese, ice cream, bacon, pork sausage, roast, croissant, biscuit, pound cake, cream Danish, cookies and pies and should be limited.

There are indications that children and adolescents are not meeting the minimum recommended servings of five fruits and vegetables daily recommended by the Food Guide Pyramid (American Dietetic Association, 2004; Cavadini et al., 2000). This trend is partially explained by the limited variety of fruits and vegetables consumed in the United States. In 2000, five vegetables—iceberg lettuce, frozen potatoes, fresh potatoes, potato chips, and canned tomatoes—accounted for 48 percent of total vegetable servings and six fruits (out of more than 60 fruit products)—orange juice, bananas, apple juice, apples, fresh grapes, and watermelon—accounted for 50 percent of all fruit servings (Putnam et al., 2002).

The IOM (2004) report found additional trends in the increase of unhealthy food consumption in youth. In the past 20 years, total energy intake away from home increased from
20% to 32% for children and portion sizes for children aged two years and older increased for foods consumed at home and away from home. Children ages six-eleven consumed 21-23 teaspoons of added sugars; nearly triple the recommendation of the Food Guide Pyramid. Children in 1977 consumed more vegetables, meat, poultry, fruit, fish and eggs than children in 1998. Adolescents today have markedly increased daily soda consumption to three or more 8 ounce servings a day (IOM 2004).

Wang et al. (2007) studied diet and family characteristics in 498 students in grades five through eight in four predominantly low income African American communities in Chicago (56.2% girls). They reported that only 37.2% of the students lived with two parents, 25.1% of the girls were obese, and 39.8% of the respondents were at risk for overweight. In addition, vegetable and fruit consumption was low. The students consumed too many fried foods and soft drinks; 55.1% consumed fried food twice or more daily and 19.5% consumed fried foods four times or more daily; 70.3% consumed soft drinks twice or more daily and 22.0% consumed soft drinks four times or more daily on average.


Parents can help reduce adolescent obesity through a number of methods including: offering a variety of healthy foods early in life including fruits, vegetables and dairy; decreasing fast food, candy, chips and soda consumption; decreasing portion sizes; eating meals as a family; decreasing snacking; eating meals at home and ensuring that children eat breakfast. Lack of parental concern about their children’s weight status and acceptance of obesity may lead to parental feeding practices (Becker et al., 1999; Contento et al., 2003; Sherry et al., 2004).
MyPyramid also has guidelines for adults based on gender and age. These guidelines are specified in Table III.

### TABLE III

**MYPYRAMID FOOD GROUP RECOMMENDATIONS FOR ADULTS**

<table>
<thead>
<tr>
<th></th>
<th>Vegetable (cups)</th>
<th>Grain (ounces)</th>
<th>Protein (ounces)</th>
<th>Dairy (cups)</th>
<th>Fruit (cups)</th>
<th>Calories</th>
<th>Discretionary Calories</th>
</tr>
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<tbody>
<tr>
<td>Women</td>
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<tr>
<td>19-30</td>
<td>2 ½</td>
<td>6</td>
<td>5 ½</td>
<td>3</td>
<td>2</td>
<td>2000</td>
<td>265</td>
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<td>Women</td>
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<tr>
<td>31-50</td>
<td>2 ½</td>
<td>6</td>
<td>5</td>
<td>3</td>
<td>1 ½</td>
<td>1800</td>
<td>195</td>
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</tr>
<tr>
<td>51 +</td>
<td>2</td>
<td>5</td>
<td>5</td>
<td>3</td>
<td>1 ½</td>
<td>1600</td>
<td>130</td>
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<tr>
<td>Men</td>
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<tr>
<td>19-30</td>
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<td>6 ½</td>
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<tr>
<td>Men</td>
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<td>31-50</td>
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<td>51 +</td>
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<td>6</td>
<td>5 ½</td>
<td>3</td>
<td>2</td>
<td>2000</td>
<td>265</td>
</tr>
</tbody>
</table>

The IOM (2004) report found parental trends in the increase of unhealthy food in American men and women. In the past 20 years, total energy intake consumed away from home increased
from 18% to 34% and energy intake for men and women have increased approximately 200 to 300 kcal per day, respectively. In addition, the consumption of milk decreased from 31 gallons to 24 gallons per capita, while cheese consumption increased 146%. Also adults consumed 24% more fruit and vegetables in 1970 than in 1997, and annual soft drink consumption increased from 34.7 to 44.4 gallons per capita from 1991-1997 (IOM, 2004).

L. Relationship Between Early Adolescent’s and Parent’s Eating Patterns

Some national and international studies have found a correlation between child and parent eating patterns; however, they failed to include African American adolescent girls and their parents in their sample (Adelekan & Adeodu, 1997; Oliveria et al., 1992; Perusse et al., 1988; Russow & Rice1994; Vauthier et al., 1996). Few studies have included African American adolescent girls and their parents as participants in measuring the relationship between child and parent eating patterns (Cullen, Lara & de Moor, 2002, Wang, Li & Caballero, 2009).

Perusse et al. (1988) examined total energy intake and intakes of carbohydrate, fat and protein as well as the percentage of energy derived from nutrients calculated from a 3-day dietary record in 1597 subjects living in 375 families of French descent in Canada. Familial correlations were computed in pairs of biological relatives and relatives by adoption for familial resemblance observed in energy intake. No significant genetic effect was found for intake of any nutrient tested, and cultural inheritance was found to be more important than genetic inheritance.

Oliveria et al. (1992) in the Framingham Children’s Study examined diet records of all white generally middle class families in Massachusetts for an average of nine days. Participants included 87 mothers, 83 fathers, and 91 children aged 3-5 years. A statistically significant but
modest correlation \((r < 0.50)\) was found between parents' and children's intakes for most nutrients. The association was stronger between mothers and children than between fathers and children. In addition a stronger association existed between parent’s and children’s intakes for nutrients when children consumed more meals at home.

Vauthier et al. (1996) examined the relationship of energy intake and the proportion of protein, fat and carbohydrate in the diet of 387 middle class French families. To be included in the sample, the parent had to be less than 65 years old and the child was older than seven. Food intake was estimated by a 3-day food consumption diary. For energy and all macronutrients, spouse-spouse and child-child correlations were higher than parent-child correlations suggesting that genetic links had less of an effect, giving way to cultural and other environmental factors. Families who shared meals together more often had a higher resemblance in eating patterns than those that did not.

Cullen, Lara and de Moor, (2002) examined parent and child dietary fat practices and child dietary fat intake. One hundred and thirty-two parochial school students in the 4th and 6th grade from eight schools were given food records. Of these students 20% were African American, 42% Euro American, 30% Mexican American and 8% Asian American. Ninety-nine percent of the parents were mothers, 65% of the students were female and 82% reported two-parent families. The percentages for high school or less, some college, college degree or higher were 22%, 31% and 45%, respectively. Students recorded seven consecutive days of dietary intake including food preparation method (fried) and place, food description and portion size for breakfast, lunch, supper and snack. Also recorded were number of servings and place where the food was eaten. Trained data collectors visited the rooms on the five school days. A parent low-
fat practices (PLFP) scale was created with the items matching the child low-fat practices (LFPs)
e.g., frequency of using low fat milk, cheese, sour cream and salad dressings, removing meat
skin or fat from meat before eating and frequency and amount of fruits and vegetables consumed.
Parents completed a 21-item questionnaire which asked how often fat related behaviors were
c Conducted over the previous week. This questionnaire was broken down into three scales: meat
modifications (MMOD); fat substitutions (FSUB); and fruit, juice, and vegetable practices
(FJVP). Parent PLFP, FSUB, and FJVP were significantly correlated with child LFPs. Parent
LFP was a significant predictor of child LFP.

Wang, Li and Caballero (2009) studied 121 mother-child pairs with adolescents aged 10-14
(girls n = 68, boys n = 53). The sample included predominantly African American adolescent
boys and girls and their parent (mostly mothers) from Chicago, Illinois. Sixty percent of the
dyads had a family annual income below $20,000. The student’s food frequency survey, a 152
item survey adapted from the Youth Risk Behavioral Surveillance Survey, Coordinated
Approach to Child Health study questionnaires and the Youth Adolescent Questionnaire were
administered in the school and the parent 180 item food frequency questionnaire was mailed.
Based on self-reports, 72% of the mothers were overweight or obese. Girls generally showed a
stronger association than boys of having similar dietary patterns as their mothers. Reported
dietary patterns included: energy (kcal), total fat, percent energy from fat, fiber, calcium, fruits
and vegetables, fried food, sweetened beverages, and snacks. Normal-weight adolescents and
mothers had a relative high correlation in their vegetables and fruits intake (0.26 vs. 0.36) as well
as fried food consumption (0.21 vs. 0.30). Working mothers had a stronger correlation in energy
intake compared to those unemployed. There was also a stronger correlation for vegetable and
fruit consumption when vegetables were served with dinner at least three times per week ($r=0.43$), but only for mother–son pairs. Mothers who gave their children pocket money to use to purchase and eat snack foods had a higher risk of similar undesirable eating patterns as their children. These undesirable eating patterns included the consumption of high-energy, high-fat, and high number of snack foods. In general, the mothers who participated in food-assistance programs consumed more energy, fat, fiber, and calcium ($p<0.05$) and their children consumed significantly higher percentage of energy from fat than their counterparts ($p<0.05$), but their other intakes were not significantly different.

Young people’s eating patterns are affected by multiple factors other than parental and family influences (French et al., 2001). As reported earlier, the IOM report (2004) shows that adolescents today have an increased prevalence of snack food consumption. Low-income children because of the free breakfast and lunch programs in schools may eat both breakfast and lunch at school, therefore eating more meals with their peers and less meals with the family than other SES groups (Guthrie, Lin & Frazao, 2000; Jahns, Siega-Riz, & Popkin 2001; Siwif & Senf, 2006; Zizza, Siega-Riz & Popkin 2001). Physical environmental characteristics that have been associated with obesity in low income communities include: the loss of major grocery store chains, increase in fast food chains, and the increase in crime (Dietz & Gortmaker, 2000; Yancey et al., 2006).

M. Community, Demographic and Societal Characteristics

The physical environments of low-income ethnic minority children are less favorable for weight control; physical environments can influence obesity development (French, Story & Jeffery, 2001). In low-income ethnic minority communities, there is less access to supermarkets
and retail stores that have a mix of healthy foods at a reasonable cost and more access to fast food restaurants (Kumanyika & Grier, 2006, Sallis & Glanz, 2006). In low-income communities there are more billboards marketing high calorie snack foods (e.g., pastries, donuts and chips), soft drinks and candy as compared to predominantly white communities (Henderson & Kelly, 2005; Tirodkar & Jain, 2003).

Given the disproportionate prevalence of poverty in minority populations, aspects of the economy and economic policy that relate to the potential to avoid high calorie foods are important in anticipating ethnic differences in childhood obesity. Even though, as previously stated, food has become less expensive, the least expensive of all foods is most often high calorie- nutrient poor foods (Drenowski and Spector, 2004). Thus those with less income may rely on high calorie/nutrient poor foods, unlike Americans of higher socioeconomic status (Mendoza et al., 2006). Fisher and Kral (2008) analyzed portion sizes available at fast food restaurants, chain restaurants, and independent stores and found that individual consumer portions were often two to eight times larger than USDA standards. In addition, current portion size offerings for selected foods and beverages (i.e., canned and fountain soda, hamburgers, french-fries, chocolate bars) were two to five times larger than the original size offered. Austin et al. (2005) and Kipke et al. (2007) found an increase in the prevalence of convenience stores or fast food restaurants within walking distance of schools of low income, minority communities as well as a la carte options inside of schools. These energy rich foods can lead to weight gain in this population.
III. METHODS

A. Introduction

The purpose of this study was to describe eating behaviors of early adolescent African American girls between the ages of 10 -12 and their parent in a Midwest, urban, minority communities to determine the relationship between the parents’s and early adolescent African American girls’s eating behaviors. This section will discuss the design, setting, sample inclusion and exclusion criteria, instrumentation, procedure, pilot study, data analysis/data validity and human subjects.

B. Design

This study was a cross-sectional descriptive study. This method is most appropriate when one seeks to describe the relationship among variables rather than to infer a causal relationship.

C. Setting

The study was conducted in Midwestern, urban predominantly African American communities located in greater metropolitan areas of Chicago, Illinois. Chicago has a population of close to three million residents with 37% African American. Of the total population, 28% of those under the age of 18 live below the poverty line (US Census, 2000). The city is made up of many racially segregated communities with high concentrations of minorities living in specific areas. Three of these racially segregated communities were selected as the data collection sites because of the dense population of African Americans living within the community. The
communities ranged from 89.7% - 97.8% African American with 29.6% - 46.6% of the population living below twice the poverty level (Chicago Department of Public Health, 2006). Data collection sites were churches, stores, clinics, public libraries and schools.

D. Sample Inclusion And Exclusion Criteria

The sample consisted of 50 pairs of early adolescent African American girls and one of their parents. Sample size was decided based on 10 early adolescent African American girl and parent pairs per each of the major study variables which included: BMI, eating patterns (skipping meals and where/ with whom food is eaten), food choices, getting money for snacks and fast food consumption. Inclusion criteria for the adolescent was self-identified as African American, age 10-12, female who has a parent willing to participate in the study. Parent was defined as the adult who is the biological parent or surrogate parent living in the household of that adolescent, who, in the opinion of the adolescent, is acting in a parenting role for the adolescent, and hereafter referred to as a parent. Parent must be 21 and older to participate in this study. Exclusion criteria for the adolescent included those that are currently pregnant, younger than 10, older than 12, and male. Exclusion criteria for the adolescent and parent included those diagnosed with eating disorders such as bulimia and anemia and metabolic disorders such as PKU- phenylketonuria, galactosemia, biotinidase deficiency, maple syrup urine disease, tyrosimemia or homocystinuria. In addition, those conditions or procedures that prevent the oral consumption of foods e.g. feeding tubes (nasogastric, gastric etc).

E. Instrumentation
1. Introduction

Assessment of food intake and eating habits is a challenging measurement issue. Cognitive issues among early adolescents include memory recall and estimation of portion sizes, variability in food intake from day to day and misreporting of food intake (Domel, Thompson, Baranowski and Smith, 1994, Baxter et al., 2004). Self-reported questionnaires, 24-hr recalls, food diaries, and direct observations have all been used to assess dietary intake in adults and children. Food diaries and direct observations are the most time consuming and expensive of the four methods (Rockett, Wolfe and Colditz, 1995). Twenty four-hour recall can reliably assess micronutrients, macronutrients and total energy whereas food frequencies assess general eating behaviors and food patterns like types of food, snacking and meal patterns (Baranowski, Dworkin, Henske, 1986, Cullen, Watson and Zakeri, 2008). A food frequency questionnaire can be used as a cost efficient, reliable method to assess eating patterns in youth (Hammond et al., 1993). Food frequency questionnaires were used in this study as they have been found to be an appropriate tool for examining the eating habits of African Americans as compared to recall methods. Food frequency questionnaires have been found to be as accurate as recall methods but take less time to complete and are less expensive to administer (Resnicow et al., 2000). The data collection time per participant was 45 minutes for adolescent girls and 60 minutes for parents.

2. Eating Habits Questionnaire
The purpose of the Eating Habits Questionnaire (EHQ) is to determine how often, where and with whom respondents eat breakfast, dinner and snacks (foods eaten outside of breakfast, lunch and dinner) (The Eating Habits Questionnaire addresses research questions 1 and 3). The EHQ was developed by the researcher based upon an extensive review of the literature. The EHQ contains 18 forced-choice questions e.g., How many days last week (Monday through Friday) did you eat breakfast; and where did you eat breakfast during the week? (See Table VI). The EHQ for the early adolescent African American girl provides dietary intake information for the adolescent girl. The EHQ for the parent provides dietary intake information for the parent. The responses will provide level II information (child characteristics and child risk factors) and level III information for the modified version of the ecological model of childhood obesity (parenting styles and family characteristics) that ascertain dietary intake of the adolescent and parent respectively along with the Block Kids 2004 Food Frequency Questionnaire (discussed below). The responses elicit nominal data. Content validity of the EHQ is supported by the fact that the EHQ is based upon current literature. Preliminary test-retest reliability of the EHQ was 0.82. The EHQ requires approximately 15 minutes for the adolescent girl to complete and approximately 10 minutes for the parent.

3. **Block Kids 2004 Food Frequency Questionnaire**

The purpose of the Block Kids 2004 Food Frequency Questionnaire (BKFFQ) is to assess nutritional intake of respondents over a one-week period for the early adolescent African American girl and her parent (Block et al., 2000). (The Block Kids 2004 Food Frequency Questionnaire address research questions 2 & 4). The responses will provide level II information (child characteristics and child risk factors) and level III information for the modified
version of the ecological model of childhood overweight (parenting styles and family characteristics) that ascertain dietary intake of the adolescent and parent respectively along with the Eating Habits Questionnaire (discussed above). In the present study, the BKFFQ will be used to assess vegetables, fruits/fruit juices, grains, protein, dairy, calories, fats, oils and sweets intake over a one week period. The questionnaire was developed by Block and colleagues in 2000 and revised in 2004 to include 90% of the food items identified from the Center for Disease Control’s National Health and Nutrition Examination Survey III as important in the target age and demographic group (Cullen et al., 2008). The BKFFQ consists of 72 food and beverage items using six responses ranging from none to everyday, e.g., how many days last week did you eat eggs, cereal, bananas, etc. There are five questions to clarify some responses, e.g., when you ate cereal, which kind did you eat? Responses include: Sweet cereal such as Frosted Flakes, Fruit Loops; Plain cereal, such as Corn Flakes, Cheerios; Fiber cereal such as Raisin Bran, Shredded Wheat, or Fortified cereal, such as Total or Product 19. Quantities consumed are determined by pictures that are provided to enhance accuracy in quantifying serving sizes, e.g., when you ate it, how much did you have? ¼ cup, ½ cup, 1 cup or 2 cups (Block et al., 2000). Finally, the BKFFQ asks respondents to self report their gender, age, race, height, and weight.

The BKFFQ has demonstrated reliability on a sample of 2,376 Hispanic third graders (boys 48% and girls 52%) (Garcia- Dominic, et al., 2011). Two week test-re-test reliability correlation was 0.81 ($p < 0.001$). Block et al., (2000) suggested that the BKFFQ takes 25 minutes to complete.

4. **Demographic Questionnaire (parent)**
The demographic questionnaire for the parent elicits the parent’s marital status, highest educational level, disease diagnosis, household income, and financial assistance and employment status (The Demographic Questionnaire addresses Research question 5). It also seeks to elicit information on the number of people living in the household, number of children under 18 living in household, and who does most of the cooking in the household. The responses provide level IV information for the modified version of the ecological model of childhood overweight (community, demographic and societal characteristics) that ascertain the ethnicity and socioeconomic status of the parent. It was developed by the researcher from a review of the literature and reflects items that have been shown to affect adolescent girls’ eating behaviors. The demographic questionnaire for parent is a ten item dichotomous and forced choice questionnaire. (See Table IV). The demographic questionnaire requires approximately 10 minutes to complete.

5. **Demographic Questionnaire (adolescent girl)**

The demographic questionnaire for the adolescent girl elicits the adolescent girl’s present grade, disease diagnosis, and receipt of extra money for snacks (foods eaten outside of breakfast, lunch and dinner). It also elicits information on whether they use the money for snacks (foods eaten outside of breakfast, lunch and dinner), and how much money is used for snacks (foods eaten outside of breakfast, lunch and dinner), the number of people living in household, number of children under 18 living in household, and who does most of the cooking in the household (Research question 5). The responses provide level IV information for the modified version of the ecological model of childhood overweight (community, demographic and societal characteristics) that ascertain the ethnicity and socioeconomic status of the early adolescent
African American girl. It was developed by the researcher from a review of the literature and reflects items that have been shown to affect adolescent girl’s eating behaviors. The demographic questionnaire for adolescent girls is a seven-item dichotomous and forced choice questionnaire. (See Table V) Preliminary test-retest reliability of the demographic questionnaire for adolescent girl was 0.82. The demographic questionnaire requires approximately 10 minutes to complete.
# TABLE IV

**DEMOGRAPHIC QUESTIONNAIRE**

**KEY CONCEPTS AND MEASURES FOR PARENT**

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<thead>
<tr>
<th>Concept</th>
<th>Measure</th>
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<td>Demographic Characteristics</td>
<td>1. What is your current marital status?</td>
</tr>
<tr>
<td></td>
<td>2. What is the highest level of education you have completed?</td>
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<td></td>
<td>3. How many people live in your household?</td>
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<td></td>
<td>4. How many children under 18 live in your household?</td>
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<tr>
<td></td>
<td>5. Has the doctor or nurse ever told you that you have any of the following? High blood pressure/ Diabetes/ High cholesterol/ Cancer/ Heart disease/ Asthma/ Stroke/ Other</td>
</tr>
<tr>
<td></td>
<td>6. What is your current yearly household income?</td>
</tr>
<tr>
<td></td>
<td>7. Do you get additional financial assistance?</td>
</tr>
<tr>
<td></td>
<td>8. Are you currently?…employed, unemployed etc</td>
</tr>
<tr>
<td></td>
<td>9. Who does most of the cooking in your household?</td>
</tr>
<tr>
<td>Health History</td>
<td></td>
</tr>
<tr>
<td>Socioeconomic Status</td>
<td></td>
</tr>
<tr>
<td>Person responsible for meal preparation</td>
<td></td>
</tr>
</tbody>
</table>
TABLE V

DEMOGRAPHIC QUESTIONNAIRE

KEY CONCEPTS AND MEASURES FOR ADOLESCENT GIRL

<table>
<thead>
<tr>
<th>Concept</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Demographic Characteristics</td>
<td>1. What grade are you in?</td>
</tr>
<tr>
<td></td>
<td>2. How many people live or stay in your household?</td>
</tr>
<tr>
<td></td>
<td>3. How many children under 18 live or stay in your household?</td>
</tr>
<tr>
<td>Health History</td>
<td>4. Has the doctor or nurse ever told you that you have any of the following? Diabetes/ Allergies/ Asthma/ Other</td>
</tr>
<tr>
<td>Pocket Money</td>
<td>5. Do you get money from your parent that you use to buy snacks (food eaten outside of breakfast, lunch and dinner)?</td>
</tr>
<tr>
<td>Person responsible for meal</td>
<td>6. How much money did you spend last week on (food outside of breakfast, lunch and dinner)?</td>
</tr>
<tr>
<td>preparation</td>
<td>7. Who does most of the cooking in your household?</td>
</tr>
</tbody>
</table>
## TABLE VI

**EATING HABITS QUESTIONNAIRE**

**KEY CONCEPTS AND MEASURES FOR ADOLESCENT GIRL & PARENT**

<table>
<thead>
<tr>
<th>Concept</th>
<th>Measure</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Adolescent Girl &amp; Parent</strong></td>
<td>1. How many days last week (Monday- Friday) did you eat breakfast?</td>
</tr>
<tr>
<td>Dietary Intake</td>
<td>2. Where did you eat breakfast during the week (Monday- Friday)?</td>
</tr>
<tr>
<td></td>
<td>3. How many days last weekend (Saturday and Sunday) did you eat breakfast?</td>
</tr>
<tr>
<td></td>
<td>4. Where did you eat breakfast last weekend (Saturday and Sunday)</td>
</tr>
<tr>
<td></td>
<td>5. How many days last week (Monday- Friday) did you eat dinner?</td>
</tr>
<tr>
<td></td>
<td>6. Where did you eat dinner last week (Monday- Friday)?</td>
</tr>
<tr>
<td></td>
<td>7. How many days during the weekend (Saturday- Sunday) did you eat dinner last week?</td>
</tr>
<tr>
<td></td>
<td>8. Where did you eat dinner last weekend (Saturday- Sunday)?</td>
</tr>
<tr>
<td></td>
<td>9. Who did you eat breakfast with last week (Monday- Friday)?</td>
</tr>
<tr>
<td></td>
<td>10. Who did you eat dinner with last week (Monday- Friday)?</td>
</tr>
<tr>
<td></td>
<td>11. How many days during last week (Monday- Friday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?</td>
</tr>
<tr>
<td></td>
<td>12. How many days last weekend (Saturday and Sunday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?</td>
</tr>
<tr>
<td></td>
<td>13. Which fast food store did you get food from last week (Monday- Friday)?</td>
</tr>
<tr>
<td></td>
<td>14. Please list below the fast food items (main dish, side dish and drink) that you purchased last week?</td>
</tr>
<tr>
<td></td>
<td>15. How many days last week (Monday- Friday) did you eat snacks (foods eaten outside of breakfast, lunch and dinner)?</td>
</tr>
<tr>
<td></td>
<td></td>
</tr>
<tr>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>16.</td>
<td>During last week (Monday- Friday) you ate snacks that you got from…</td>
</tr>
<tr>
<td>17.</td>
<td>How many days last weekend (Saturday-Sunday) did you eat snacks (foods eaten outside of breakfast, lunch and dinner)?</td>
</tr>
<tr>
<td>18.</td>
<td>During the last weekend (Saturday and Sunday) you ate snacks (foods eaten outside of breakfast, lunch and dinner) that you got from…</td>
</tr>
</tbody>
</table>
F. Procedure

A variety of sites were used to recruit and collect data. Recruitment sites include areas known to have a high concentration of the target population such as park districts, YMCA, shopping malls, and schools during report card pick up day. Data collection was conducted in person or via telephone. Telephone interviews have been found to have good interrater reliability (kappa 0.74-1.0) with face-to-face interviews (Rohde, Lewinsohn, and Seeley, 1997). Face-to-face recruitment and flyers with contact information describing the study and eligibility criteria were posted throughout the community listing dates, times, and place of recruitment (See Appendix C & D). The researcher and research assistants conducted all aspects of the survey procedures.

The research assistant was an individual preselected by the researcher. The research assistant completed the University of Illinois at Chicago IRB training in human subjects’ protection. In addition, the researcher provided the research assistant with a four hour orientation to the study and study materials.

Those research participants who met inclusion criteria were asked to complete the survey questionnaire with the option of having the questions read to them. The entire data collection time per participant did not exceed 45 minutes for adolescent girls and 60 minutes for parents. Research participants received an incentive for their participation ($20 for the parent and $10 for the early adolescent African American girl), a healthy snack and pamphlets from the USDA Kids Food Pyramid. Every attempt was made to protect privacy and identity. To maintain privacy the research participants complete the questionnaires in a quiet area with limited intrusion. To
protect identities the parent-adolescent girl pairs were assigned code numbers. Furthermore, no identifying information was collected. Finally, participants were instructed that they have the option to drop out of the study at any time even after their consent and assent were obtained.

Research participants met the investigator and research assistant at the pre-established collection time. Healthy snacks were provided to the pairs. The informed consent form was read aloud by the researcher to the parent-adolescent girl pairs and any questions were clarified by the researcher. Parent-adolescent girl pairs were asked to state the purpose of the study to verify their understanding of the study. First, the parents were asked to consent to participate in the study and to provide permission for their adolescent girl to participate. Then the adolescent girls were asked to assent to participation in the study (See Appendices E & F). The parent and adolescent girl were separated in different sections of the data collection room to provide privacy for the respondents. The researcher asked if respondents would like the questions read aloud. Respondents were asked not to share answers with each other while they are completing the forms. The adolescent girl and parent were given the eating habits questionnaire, the demographic questionnaire and the Block Kids 2004 Food Frequency questionnaire in that order. Upon completion of the questionnaire, participants were thanked for their participation and given the incentive and pamphlets from the USDA Kids Food Pyramid.

G. Pilot Study

A pilot study was conducted to determine the feasibility of the data collection procedures and recruitment. The pilot study allowed the opportunity to establish the 24-hour test-retest reliability of the Eating Habits Questionnaire and the Demographic Questionnaire. Five
adolescent girls were recruited to conduct the pilot study. The five girls were recruited from returned phone calls received from flyers that were distributed in the target communities. After reciting the telephone recruitment script the data collection time and place was established. At data collection time the researcher obtained written consent from the parent and written assent from the adolescent girl participant. The Eating Habits and Demographic Questionnaire were then administered to the girls.

H. Data Analysis & Data Validity

All data analysis was accomplished using SPSS Version 17.0. All data were coded, by assigning each early adolescent girl and parent pair a number, the data was checked and entered into a password protected computer file for analysis. Data checking involved ascertaining if there are impossible and/or missing values, which were corrected. While every attempt was made to avoid missing values, missing data was coded as such and deducted from the sample size. The pilot data was used to determine the 24- hour test-retest reliability of the Eating Habits Questionnaire (EHQ) and the Demographic Questionnaire (See Procedure Section F) using percent agreement per question.

Data analysis proceeded as follows: first, all demographic variables of the adolescent girl (age, present grade, height, weight, number of people living in household, number of children under 18 living in household, disease diagnosis, receive extra money for snacks, use the money for snacks, how much money is spent on snacks, and who does most of the cooking in their household) and parent variables (gender, age, height, weight, race, marital status, highest educational level, number of people living in household, number of children under 18 living in household, disease diagnosis, household income, financial assistance, who does most of the
cooking in their household, and employment status) were analyzed using measures of central tendency and measures of dispersion as appropriate. Then the analysis addressed each research question:

1. Do early adolescent African American girls eat with their parent?
   a. How often do early adolescent African American girls eat breakfast with their parent?
   b. How often do early adolescent African American girls eat dinner with their parent?
   c. How often do early adolescent African American girls eat snacks?
   d. Where do early adolescent African American girls eat breakfast, dinner and snacks?

2. How many vegetables, grains, protein, dairy, fruits/fruit juices, calories and fats, oils and sweets do early adolescent African American girls eat?

3. Do parents eat with their early adolescent African American girls?
   a. How often do parents eat breakfast with their early adolescent African American girl?
   b. How often do parents eat dinner with their early adolescent African American girls?
   c. How often do parents eat snacks?
   d. Where do parents of early adolescent African American girls eat breakfast, dinner and snacks?

4. How many vegetables, grains, protein, dairy, fruits/fruit juices, calories and fats, oils and sweets do parents of early adolescent African American girls eat?
5. What is the relationship between the self reported eating behaviors of early adolescent African American girls and their parent?

The null ($H_0$) and alternative ($H_1$) hypotheses are as follows:

$H_0$: Observed frequencies of eating behavior responses of African American early adolescent girls and their parent will not differ significantly from what you would expect by chance alone.

$H_1$: Observed frequencies of eating behavior responses of African American early adolescent girls and their parent will differ significantly from what you would expect by chance alone.

For research questions 1-4, frequency distributions were constructed of responses to each question contained on the Eating Habits Questionnaire and the Block Kids 2004 Food Frequency Questionnaire for both the adolescent girl and the parent. Finally, to address research question 5, Chi-square analyses were used to determine the association between the adolescent girl’s responses and those of the parent on the Eating Habits Questionnaire. A chi-square probability coefficient of less than or equal to 0.05 is statistically significant (Polit & Beck, 2004). Pearson Correlation were used to determine the relationship between adolescent girl’s responses and those of the parent on the Block Kids 2004 Food Frequency Questionnaire with particular focus on servings of vegetables, grains, protein, dairy, total calories, and frequency of fruits and fruit juices, frequency of fats, oils and sweets.
I. Data Reliability

Reliability, or measurement consistency, was evaluated by the level of agreement between subject responses using the 24-hour test-retest reliability measure of stability. The 24-hour test-retest reliability was used to measure the reliability of the scale called the Eating Habits and Demographic Questionnaire that was developed by the researcher. The scale’s reliability assessment included administering the scale to five early adolescent girls 24 hours apart. The test-retest reliability coefficient for the scale was 0.82. Reliability coefficients of 0.70 or better are adequate for test-retest group level data analysis (Bland & Altman, 1986).

J. Human Subjects

To ensure the risks to all participants have been minimized, the parents provided consent for themselves and gave permission for adolescent and the adolescent girls will assent to participation in the study. During recruitment and throughout the study, participants were advised that participation is strictly on a voluntary basis. Participants were not be coerced into participation and they are free to discontinue participation at any time during this study. The University of Illinois Institutional Review Board approved and has oversight over this study to protect participant’s rights (Appendix G).
IV. RESULTS

A. Participant Characteristics

Fifty early adolescent girls and fifty parents participated in the study. As shown in Table VII girls ranged in age from 10-12 years (M = 10.86; SD = .90). The majority of the girls were in fifth and sixth grade and reported three to six people living in the household and one to four children under 18 years of age living in the household. Fifty-four percent reported no chronic illnesses and 20% reported having asthma. Fifty percent reported receiving money to buy snacks and 58% reported receiving from $0-$10 per week to buy snacks. Sixty eight percent reported that their parent did most of the cooking in the household. Four percent of the girls were underweight, 36% were normal weight, 24% were overweight and 36% were obese.

As shown in Table VIII, parents ranged in age from 24-72 years (M= 39.18 years; SD = 11.06). Forty-nine female parents and one male parent participated in the study. Forty-six percent of these parents reported being single. Of the 48 parents that reported employment information, 28% were unemployed, 50% were employed, and 22% had part time employment. In regards to education, 36% of the parents reported having some college and 26% reported completing high school. Eighty-six percent of the parents reported an annual income below $50,000. Of the 48 parents who provided information about receiving governmental financial assistance 36% reported receiving no assistance, 24% reported receiving SNAP/ LINK/ Food Stamps, and 24% reported receiving more than one form of governmental assistance. Most parents (86%) reported three-six people living in the household and 96% reported between one-four children less than 18 years of age living in the household. Of the 45 parents providing
information on chronic illness, 38% reported having no chronic illnesses, 20% reported having hypertension and twelve percent reported having more than one illness. Most parents (60%) gave their children up to $10 within the last week for snacks. Seventy-four percent of the parents reported being the primary person to prepare meals in their home. Six percent of the parents were normal weight, 32% were overweight and 62% were obese.

**TABLE VII**

**DEMOGRAPHIC CHARACTERISTICS OF THE ADOLESCENT GIRL PARTICIPANTS (N=50)**

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Female</td>
<td>50</td>
<td>100</td>
</tr>
<tr>
<td><strong>Age (Years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>11</td>
<td>9</td>
<td>18</td>
</tr>
<tr>
<td>12</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td><strong>Grade</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Third</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Fourth</td>
<td>7</td>
<td>14</td>
</tr>
<tr>
<td>Fifth</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Sixth</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Seventh</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Eighth</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td><strong>Number of People Living in the Household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or Less</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>3-4</td>
<td>21</td>
<td>42</td>
</tr>
<tr>
<td>5-6</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>7 or more</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td><strong>Number of Children under 18 Living in the Household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>14</td>
<td>28</td>
</tr>
<tr>
<td>2</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>3</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>Chronic Disease Status*</td>
<td>None</td>
<td>Diabetes</td>
</tr>
<tr>
<td>-------------------------</td>
<td>------</td>
<td>----------</td>
</tr>
<tr>
<td>27</td>
<td>1</td>
<td>10</td>
</tr>
<tr>
<td>54</td>
<td>2</td>
<td>20</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Primary person responsible for cooking**</th>
<th>Me</th>
<th>My parent</th>
<th>My grandparent</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>34</td>
<td>5</td>
<td>2</td>
</tr>
<tr>
<td>2</td>
<td>68</td>
<td>10</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Received Money that was used to buy snacks</th>
<th>Yes</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>37</td>
<td>74</td>
<td></td>
</tr>
<tr>
<td>13</td>
<td>26</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Pocket Money Received</th>
<th>$0.01- $4.99</th>
<th>$5- $10</th>
<th>$10-$15</th>
<th>$15- $20</th>
<th>I did not get money to buy snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>14</td>
<td>14</td>
<td>4</td>
<td>1</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>28</td>
<td>28</td>
<td>8</td>
<td>2</td>
<td>34</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Weight Status</th>
<th>Underweight</th>
<th>Normal weight</th>
<th>Overweight</th>
<th>Obese</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>18</td>
<td>12</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>4</td>
<td>36</td>
<td>24</td>
<td>36</td>
<td></td>
</tr>
</tbody>
</table>

*Three respondents did not answer the question and two respondents chose more than one selection

**Ten respondents chose more than one selection
TABLE VIII
DEMOGRAPHIC CHARACTERISTICS OF THE PARENT PARTICIPANTS (N=50)

<table>
<thead>
<tr>
<th>Characteristics</th>
<th>n</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Gender</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Male</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>Female</td>
<td>49</td>
<td>98</td>
</tr>
<tr>
<td><strong>Age (Years)</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>24-29</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>30-39</td>
<td>29</td>
<td>58</td>
</tr>
<tr>
<td>40-49</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>50-59</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>60 and over</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Marital Status</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Single</td>
<td>23</td>
<td>46</td>
</tr>
<tr>
<td>Divorced/ Separated</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Married</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>Widowed</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Living with Another</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td><strong>Education</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>High School</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>Vocational/ Technical School</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td>Some College</td>
<td>18</td>
<td>36</td>
</tr>
<tr>
<td>Associate’s Degree</td>
<td>6</td>
<td>12</td>
</tr>
<tr>
<td>Bachelor’s Degree</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Master’s Degree or higher</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>Other</td>
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<td>2</td>
</tr>
<tr>
<td><strong>Number of People Living in the Household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2 or Less</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>3-4</td>
<td>17</td>
<td>34</td>
</tr>
<tr>
<td>5-6</td>
<td>24</td>
<td>48</td>
</tr>
<tr>
<td>7 or more</td>
<td>5</td>
<td>10</td>
</tr>
<tr>
<td><strong>Number of Children under 18 Living in the Household</strong></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1</td>
<td>13</td>
<td>26</td>
</tr>
<tr>
<td>2</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>3</td>
<td>12</td>
<td>24</td>
</tr>
<tr>
<td>Chronic Disease Status*</td>
<td>4</td>
<td>2</td>
</tr>
<tr>
<td>---------------------------------</td>
<td>---</td>
<td>---</td>
</tr>
<tr>
<td>None</td>
<td>19</td>
<td>38</td>
</tr>
<tr>
<td>High Blood Pressure</td>
<td>10</td>
<td>20</td>
</tr>
<tr>
<td>Diabetes</td>
<td>3</td>
<td>6</td>
</tr>
<tr>
<td>High Cholesterol</td>
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<td>0</td>
</tr>
<tr>
<td>Cancer</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>Heart Disease</td>
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<td>0</td>
</tr>
<tr>
<td>Asthma</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Stroke</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>Other</td>
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<td>2</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Annual Household Income</th>
<th>16</th>
<th>32</th>
</tr>
</thead>
<tbody>
<tr>
<td>Under $10,000</td>
<td>11</td>
<td>22</td>
</tr>
<tr>
<td>$10,000-$29,999</td>
<td>16</td>
<td>32</td>
</tr>
<tr>
<td>$30,000-$49,999</td>
<td>2</td>
<td>4</td>
</tr>
<tr>
<td>$50,000-$79,999</td>
<td>1</td>
<td>2</td>
</tr>
<tr>
<td>$80,000 or over</td>
<td>4</td>
<td>8</td>
</tr>
<tr>
<td>Would rather not say</td>
<td>18</td>
<td>36</td>
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</table>

<table>
<thead>
<tr>
<th>Financial Assistance**</th>
<th>12</th>
<th>24</th>
</tr>
</thead>
<tbody>
<tr>
<td>TANF/ Welfare</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>WIC</td>
<td>0</td>
<td>0</td>
</tr>
<tr>
<td>SNAP/ LINK/ Food Stamps</td>
<td>2</td>
<td>4</td>
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<tr>
<td>My mother/ father</td>
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<td>2</td>
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</table>
My spouse/ significant other | 1 | 2
Other |

**Pocket Money Given to Daughter**

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**Weight Status**

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*Five respondents did not answer the question and six respondents chose more than one response. **Two respondents did not answer the questions and twelve respondents chose more than one response. ***Two respondents did not answer the questions and two respondents chose more than one response. ****Nine respondents chose more than one response.

B. Early Adolescent African American Girl Eating with Parents

1. Eating Breakfast with Parent

Fifty-two percent (n=50) of the girls reported eating breakfast 5 times during the week days, yet only 28% (n=50) ate breakfast with their parent. Sixty percent (n=50) of the girls said they ate breakfast at home during the week and sixty percent (n=50) of the girls reported eating at home on the weekend as well. Sixty-four percent (n=50) of the girls reported eating breakfast both days on the weekend Only six percent of girls did not eat breakfast at all during the weekdays or weekend.
2. Eating Dinner with Parent

Seventy-eight percent (n=50) of the girls reported eating dinner 5 times during the week days, yet only 28% (n=50) ate dinner with their parent. Fifty-four percent (n=49) of the girls said they ate dinner at home during the week and fifty-eight percent (n=49) of the girls reported eating at home on the weekend as well. Ninety percent (n=49) of the girls reported eating breakfast both days on the weekend. Only two percent of girls did not eat dinner at all during the weekday or the weekend.

3. Eating Fast Foods and Snacks

Forty-eight percent (n=50) of girls said they had fast food only one to two days during the week (Monday-Friday) and 34% said they didn’t eat fast food. Forty-two percent (n=49) of the girls said they did not eat fast food at all during the weekend while 32% said one day and 24% said 2 days last weekend. When they did choose fast food, thirty-two percent (n=50) of the girls ate fast food from McDonald’s 12% of girls responded from a different fast food restaurant other than McDonald’s, Burger King, Taco Bell or Dunkin Donuts, 10% of girls responded from Burger King, and 10% of girls chose more than one restaurant. When asked to list the fast food items that they purchased last week, 52% (n=46) of girls chose more than one item from the list of food items, including Big Mac or Whopper; French fries or apple fries and pop or juice. When asked, “How many days last week did you eat snacks,” 54% (n=50) of girls said five days per week (Monday- Friday). During the week, 40% (n=50) of girls ate snacks that they got from home. When asked, “How many days last weekend did you eat snacks,” 60% (n=48) of girls
said two days per weekend (Saturday and Sunday). During the weekend, 40% (n=49) of girls ate snacks that they got from home.

C. Early Adolescent African American Girl Food Choices

The mean daily serving of vegetables was 2.17 (SD= 2.24) with a range of 0-11.15. Most vegetables were consumed from the other vegetables food group including foods such as iceberg lettuce, onions, cabbage and celery and leafy greens and white potatoes. Mean daily serving of grains (breads, cereals, rice and pasta) was 6.72 (SD= 4.7) with a range of 0.51-21.9. Most grains consumed were refined grains including white rice, white bread and white pasta. Mean whole grain consumption was only 0.53 and included whole grain breads and pastas with a range of 0.02- 2.01. Mean daily serving of protein was 2.53 (SD= 2.29) with a range of 0.30-8.98. Most of the protein (47%) consumed was from red meat, such as beef, and 24% from lunch meat. Mean daily serving of dairy (milk, yogurt, and cheese) was 1.37 (SD= 1.22) with range 0-5.28. Forty-six percent of girls chose reduced fat 2% milk and 40% chose whole milk. Mean daily serving of fruit (fruits and fruit juices) was 2.14 (SD=1.81) with a range of 0-7.00. Most food consumed from fruit juice was not 100% fruit juice; instead, it included orange- and fruit punch-flavored drinks. Mean daily food energy kilocalorie was 2,440.59 (SD= 1817.31) with a range of 376.10- 8,235.70. Mean daily serving of fats, oils and sweets was 4.94 (SD=2.9) with a range of 0.57-12.64. They consumed an average of 22.49 grams of oil (approximately 202 calories) and 53.86 grams of solid discretionary fats (approximately 485 calories) (See Table IX).
# Table IX

**FOOD CHOICES OF PARTICIPANTS**

<table>
<thead>
<tr>
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<tbody>
<tr>
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<td>1600</td>
<td>2440.59</td>
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<td>2298.85</td>
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<td>485</td>
<td>130-360</td>
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*Adult recommendations vary by gender and age*
D. Parent Eating Habits

1. Eating Breakfast with Girl

Fifty percent (n=50) of the parents reported eating breakfast 5 times during the week days, yet only 38% (n=50) ate breakfast with their daughter. Sixty-two percent (n=50) of the parents said they ate breakfast at home during the week and fifty-two percent (n=50) of the parents reported eating at home on the weekend as well. Fifty-two percent (n=49) of the parents reported eating breakfast both days on the weekend. Only four percent of parents did not eat breakfast at all during the weekdays and 14% did not eat breakfast during the weekend.

2. Eating Dinner with Girl

Seventy-six percent (n=49) of the parents reported eating dinner 5 times during the week days, yet only 38% (n=50) ate dinner with their daughter. Sixty-six percent (n=50) of the parents said they ate dinner at home during the week and fifty-two percent (n=50) of the parents reported eating at home on the weekend as well. Eight-six percent (n=50) of the parents reported eating dinner both days on the weekend. Only two percent of parents did not eat dinner at all during the weekdays but all parents ate dinner at least one day during the weekend.

3. Eating Fast Food and Snacks

Forty-eight percent (n=50) of parents said they had fast food only one to two days during the week (Monday-Friday) and 34% said they didn’t eat fast food. Fifty-six percent (n=50) of the parents said they did not eat fast food at all during the weekend while 32% said one day and 12% said 2 days last weekend. When they did choose fast food, thirty-six percent (n=49) of the
parents ate fast food from McDonald’s, 13% of the parents chose more than one restaurant, 6% of the parents chose Burger King, 6% of the parents chose Dunkin Donuts and 8% of the parents chose another restaurant other than McDonald’s, Burger King or Dunkin Donuts last week (Monday-Friday). When asked to list the fast food items that they purchased last week, 36% (n=46) of parents responded that they ate more than one of the following items: Big Mac or Whopper; French fries or apple fries; and pop or juice while 29% of the parents selected “Other.” When asked, “How many days last week did you eat snacks,” 34% (n=48) of parents said five days last week, 26% of parents said one-two days per week, 24% of parents said three-four days per week and 12% of parents reported that they did not eat snacks last week (Monday- Friday). Forty-eight percent (n=49) of parents ate snacks during the week they got from home, 34% of parents said they got snacks from more than one source during the week (Monday- Friday). When asked, “How many days last weekend did you eat snacks,” 50% (n=50) of parents said two days and 28% said one day last weekend (Saturday- Sunday). During the weekend, 38% (n=48) of parents ate snacks that they got from home and 34% of parents said they got snacks from more than one source.

E. Parent Food Choices

The mean daily serving of vegetables was 3.76 (SD= 3.47) with a range of 0.63-16.47. Most vegetables were consumed from the dark leafy green vegetables food group including broccoli, spinach and greens, other vegetables food group including foods such as iceberg lettuce, onions, cabbage and celery, tomatoes and white potatoes (0.22). Mean daily serving of grains (breads, cereals, rice and pasta) was 5.16 (SD= 3.53) with a range of 1.24-15.30. Most grains consumed were from the refined grains, including white breads and pastas. Whole grain mean daily
servings were 0.80 (SD=0.65) with a range of 0.07-2.83. Mean daily serving of protein was 2.57 (SD=1.86) with a range of 0.82-8.74. Most (48%) of protein consumed was from red meat including beef and 16% of protein from lunch meat. Mean daily serving of dairy (milk, yogurt, and cheese) was 0.93 (SD=0.83) with a range of 0.03-4.83. Forty-four percent of parents chose whole milk and 42% parents chose reduced fat-2% milk. The mean daily serving of fruit (fruits and fruit juices) was 1.84 (SD=1.43) with a range of 0.14-7.00. Most food consumed was from fruit juice that was not 100% fruit juice (1.22); including orange- and fruit- punch flavored drinks. Mean daily food energy kilocalorie of 2,298.85 (SD=1608.98) with a range of 722.4-7,257.68. Mean daily serving of fats, oils and sweets was 4.30 (SD=2.5) with a range of 0.29-13.61. These parents consumed an average of 22.88 grams of oil (approximately 206 calories) and 44.98 grams of solid discretionary fats (approximately 405 calories) (See Table IX).

F. The Relationship Between Eating Behaviors of Early Adolescent Girls and Their Parent

A significant positive association exists between girls’ and parents’ fast food choices made at restaurants ($\chi^2 = 14.47$, df = 5, p = 0.013). A significant association also exists between the parents’ report of who does most of the cooking in their household and the parents’ and girls’ body mass index ($\chi^2 = 21.7$, df = 10, p = 0.017). Seventy-four percent of the parents stated that they did most of the cooking and sixty-eight percent of the daughters said their parent did most of the cooking.

A significant positive correlation existed between girls’ and parents’ body mass index ($r = 0.638$, p = 0.00). A significant positive correlation existed between the girls’ and parents’ daily servings of each of the following: vegetables ($r = 0.668$, p = 0.00); fruit ($r = 0.317$, p = 0.025);
grain (r = 0.492, p = 0.000); meat (r = 0.538, p = 0.000); dairy (r = 0.514, p = 0.000); and fats, oils and sweets (r = 0.415, p = 0.003).
V. DISCUSSION

This is the first known study to provide a comprehensive picture of the frequency and location of eating breakfast, dinner and snacks during the weekdays and weekend for early adolescent African American girls and their parents. The present study provided new information on fast food consumption and skipping breakfast in early adolescent African American girls. Berkey et al. (2003) found an association between skipping breakfast and obesity for a sample of boys and girls of unknown racial background and Neimerier et al. (2006) disclosed an association between increased fast food consumption and decreased breakfast consumption and obesity for their sample of boys and girls of whom 15% were African American. The present study found the contrary to be true for early adolescent African American girls and their parents. The majority of the participants in this study ate breakfast regularly, ate meals at home, and did not skip meals yet still had higher self reported rates of obesity than the national average. In this study 36% of girls were obese and 62% of the parents were obese. The national average of obesity among African American girls and women over the age of twenty is 29.2% and 49% respectively (Ogden et al., 2010). Margellos, Silva and Whitman (2008) also found a higher incidence of obesity than the national average in underrepresented minority communities in Chicago: 58% of the girls and boys aged 2-12 were obese. Along with the high obesity rates, the majority of the parents from this study reported being diagnosed with obesity-related diseases. Fifty-eight percent of the parents were between the ages of 30-39 and 38% of them were diagnosed with high blood pressure, diabetes, cancer or asthma.
Although Panitz (1999) concluded from their national restaurant survey that 67% of American adults preferred to eat in a restaurant, the majority of the early adolescent African American girls and their parents in this study ate foods at home. The majority of the girls and parents in this study ate breakfast and dinner during the week and weekend at home as opposed to outside of the home. Both the girls and the parents in this study overwhelmingly consumed energy dense, empty calorie, high fat, and high sugar foods as well as red meat, luncheon meat, whole milk, refined grains and non-100% juice. Compared to the national recommendations, they consumed more total calories and discretionary calories and less fruit, dairy and protein. These results are similar to the results of Wang et al. (2007) who assessed the diet of fifth to eighth grade students in four predominantly low income African American communities in Chicago; 56% of their participants were girls. Wang et al. (2007) reported that the girls consumed high amounts of fried foods and soft drinks and low amounts of vegetables and fruits.

This study found a positive relationship between the energy dense, empty calorie foods consumed by the early adolescent African American girl and their parent. This is one of few known studies to examine the association between the eating behaviors of Midwestern urban early adolescent African American girls between the ages of 10-12 and their parents. Cullen, Lara and de Moor’s (2002) studied fourth and sixth grade students and their parents of whom 80% were non African American and 65% were females. Wang, Li and Caballero (2009) surveyed mother-child pairs; the children were aged 10-14 and were predominately female. Our findings of energy dense, empty calorie foods are similar to the findings from both Cullen, Lara and de Moor (2002) and Wang, Li, and Caballero (2009) who found a positive relationship between children’s and parents’ dietary intake. However, in our study, 48% of the girls and
parents said they ate fast food only one to two days in the last 5 days and the majority of the girls and parents reported that they did not eat fast food on the weekend. Many of the energy dense, empty calorie foods chosen by our sample were being consumed in the home. It is not surprising that our study also found a significant positive relationship between the early adolescent African American girl’s weight status and the weight status of their parent.

Wang, Li and Caballero (2009) found a significant correlation between the girl receiving money to buy snacks and poor eating patterns, but our study found no such association. Our study found no association between girl or parent food choices and the amount of money that the child was given to buy snacks. Early adolescent African American girls in our study made energy dense, high calorie, high fat snack food choices regardless of whether they received snack money or not. Wang, Li and Cabellero (2009) postulated that the children may be using the snack money to buy energy dense snacks outside of the home; in our study nearly half of girls and their parent reported eating snacks they acquired from home. However, receiving snack money from their parent was not an added risk factor for making poor food choices.

This is the first known study to report both the adolescent’s and parent’s perspective of whom they ate breakfast and dinner with during the week and weekend. Eisenberg et al. (2004) surveyed 48 students aged 10-14; 19 were female and 81% of the sample were African American. They found that the adolescents who ate with their families were more likely to eat breakfast, fruits, vegetables and dairy foods. Our study found no correlation between adolescent’s eating family meals with their parent and healthy food choices. Instead, our study found that a better predictor of healthy or unhealthy food choices was the food choices of the parent.
A. Implications for Practice

Clinical, school and community health practitioners should gear interventions pertaining to dietary intake of early adolescent African American girls to both the parent and the girl. Practitioners should use the My Plate and MyPyramid guide as a teaching tool to teach early adolescent African American girls and their parents the best, nutrient dense, low-fat/low-calorie choices. The findings for this study suggest that practitioners working with early adolescent African American girls should develop strategies to improve the home, school, and community environment in which the girl lives. At home, practitioners should teach the girl and the parent key components to improve nutrition knowledge such as: healthy eating on a budget, food preparation strategies, food label reading and healthy recipes. To address the different developmental levels of early adolescent girls and their parents, the researchers advise that teaching should be geared to the girl separately from the parent to address their different developmental and cognitive levels. Based on feedback from parents during the researcher’s work in community settings separate classes should be taught to the parent to help them feel empowered to change the food choices available and prepared in the home. In the event parents feel their daughter is resistant to change, they should be taught negotiation strategies such as allowing the girl to assist with meal planning and food preparation that include healthy food options. Practitioners should be aware of the barriers to the access of healthy foods, such as participants living in food areas with no access to grocery stores or high prices of healthy food. Practitioners should refrain from using marketing messages that focus on eating family meals, eating breakfast and not skipping meals and focus instead on healthy food choices, healthy
recipes and healthy preparation techniques at each meal. Practitioners should also advocate for healthy meal options at local fast food restaurants. Practitioners can access menus and nutritional information from fast food chains and use these menus as teaching tools to develop plans for healthy eating on the go. Overall, teaching geared to the girl and her parent should focus on long-term healthy eating modification instead of weight loss, and weight focused strategies in accordance to the Health at Every Size movement (HAES) (Bacon & Aphramor, 2011). HEAS emphasizes healthy lifestyle change rather than diet and exercise to improve compliance and retention rates and gradual weight loss. HEAS is based on 3 tenets: body acceptance, as opposed to weight loss or weight maintenance; reliance on hunger and satiety cues and feelings rather than dietary restriction and incorporating activity into daily lifestyles rather than structured exercise. HEAS acknowledges not only the individual self-care needs but also the community and environment in which the individual lives (Bacon & Aphramor, 2011).

B. Implications for Research

Future research should focus on the development of interventions that address the eating behaviors of early adolescent African American girls and their parents in their social and physical environment. Interventions geared towards healthy eating in early adolescent African American girls must place the girl and their parent as the unit of analysis. As such interventions must acknowledge the social, economic and built-in environments in which the dyad lives. Taking into consideration the built-in environment will set the stage for incorporating physical activity variables such as accessibility of safe options for physical activity. Physical activity is another very important component to weight control and should be incorporated as a variable to understand future early adolescent African American girl obesity research. The participants of
this study were recruited from primarily low-income communities, future studies should assess if there are differences among eating habits of early adolescent African American girls and their parents from communities of higher SES. This information can inform research that is both racially and economically relevant for the target group. A multitude of interventions such as creating home, community and school gardens, participating in nutritional and activity sports camps and after school programs geared towards early adolescent African American girls and their parent should be launched to assess the effectiveness of such programs. Researchers should use the community based participatory research (CBPR) approach that would allow researchers and lay representatives from the community to build a trusting relationship to explore strategies to promote healthy eating behaviors (Minkler & Wallerstein, 2003).

C. Limitations of the Study

There are several limitations to this study. First, convenience sampling of a homogenous group of African American early adolescent girls from Midwestern urban predominantly African American communities limit the ability to generalize eating behaviors to other populations. However, the convenience sample was needed to provide culturally targeted information useful about the eating behaviors of early adolescent African Americans from Midwest urban communities. Second, the study design was descriptive, not causational therefore nothing can be implied about the causes of the eating behaviors that were found (Polit & Beck, 2004). In addition, some of the relationships established were comparisons of aggregates rather than paired relationships. All of the multiple variables of the ecological framework that affect weight status were not explored, eating behaviors was the focus of this study; future studies should examine the relationship of other variables to weight status in early adolescent African American girls and
their parent. Finally, the responses from the study were self-reported, thus there may be some underestimating or overestimating of energy intake, weight and height.

D. Conclusion

This study found that early adolescent African American girls and their parents do not frequently skip breakfast or dinner and they frequently eat at home yet they still have obesity rates higher than the national average. It may be more beneficial to focus efforts on changing the types of foods that girls and their parent are eating while at home because home was the common source of food acquisition for breakfast, dinner and snacks. The findings from this study show that it is important to gear interventions at both the early adolescent African American girl and their parent because of the positive associations between parents and daughters on food choices and eating behaviors.
Eating Habits Questionnaire

Please take a few minutes to fill out this survey we can read the questions to you if you need more help. Thank you for your time!

I. General Eating Habits (For Adolescent Girl)

1. How many days last week (Monday-Friday) did you eat breakfast?

   None □ 1-2 days per week □ 3-4 days per week □ 5 days per week

2. Where did you eat breakfast during the week (Monday-Friday)? Circle all that apply

   At home □ At McDonalds, Burger King, Taco Bell or Dunkin Donuts □ At a different restaurant □ At a corner store □ Food truck □ Vending Machine □ I didn’t eat breakfast □ Other

3. How many days last weekend (Saturday and Sunday) did you eat breakfast?

   None □ 1 day □ 2 days

4. Where did you eat breakfast last weekend (Saturday and Sunday)? Circle all that apply

   At home □ At McDonalds, Burger King, Taco Bell or Dunkin Donuts □ At a different restaurant □ At a corner store □ Food truck □ Vending Machine □ I didn’t eat breakfast □ Other
APPENDIX A (continued)

5. How many days last week (Monday-Friday) did you eat dinner?

<table>
<thead>
<tr>
<th>None</th>
<th>1-2 days per week</th>
<th>3-4 days per week</th>
<th>5 days per week</th>
</tr>
</thead>
</table>

6. Where did you eat dinner last week (Monday-Friday)? Circle all that apply

- At home
- McDonalds, Burger King, Taco Bell or Dunkin Donuts
- At a different restaurant
- At a corner store
- Food truck
- Vending Machine
- Store in someone’s house
- Gas Station
- I didn’t eat dinner
- Other

7. How many days during the weekend (Saturday-Sunday) did you eat dinner last week?

<table>
<thead>
<tr>
<th>None</th>
<th>1 day</th>
<th>2 days</th>
</tr>
</thead>
</table>

8. Where did you eat dinner last weekend (Saturday and Sunday)? Circle all that apply

- At home
- McDonalds, Burger King, Taco Bell or Dunkin Donuts
- At a different restaurant
- At a corner store
- Food truck
- Vending Machine
- Store in someone’s house
- Gas Station
- I didn’t eat dinner
- Other
APPENDIX A (continued)

9. Who did you eat breakfast with last week (Monday- Friday) (Circle all that apply)?

- By myself
- With my parent
- With other family
- With friends
- Other
- I didn’t eat breakfast

10. Who did you eat dinner with last week (Monday- Friday) (Circle all that apply)?

- By myself
- With my parent
- With other family
- With friends
- Other
- I didn’t eat dinner

11. How many days during last week (Monday- Friday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?

- No days last week
- 1-2 days last week
- 3-4 days last week
- 5 days last week
- I didn’t eat fast food

12. How many days last weekend (Saturday and Sunday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?

- No days last week
- 1 day last week
- 2 days last week

13. Which fast food store did you get food from last week (Monday-Friday)?

- McDonalds
- Taco Bell
- Burger King
- Dunkin Donuts
- Other
- I didn’t eat fast food

14. Please list below the fast food items (main dish, side dish and drink) that you purchased last week

- Main dish (such as Big Mac, Whopper)
- Side dish (such as French fries, apple fries)
- Drink (such as pop, juice)
- Other
- I didn’t eat fast food

15. How many days last week (Monday-Friday) did you eat snacks?

- No days last week
- 1-2 days per week
- 3-4 days per week
- 5 or days times per week
- I didn’t eat snacks
APPENDIX A (continued)

16. During last week (Monday- Friday) you ate snacks that you got from... (complete the sentence with all that apply)

- At home
- At McDonalds, Burger King, Taco Bell or Dunkin Donuts
- At a different restaurant
- At a corner store
- Food truck
- Vending Machine
- Store in someone’s house
- Gas Station
- I didn’t eat snacks
- Other

17. How many days last weekend (Saturday-Sunday) did you eat snacks?

- None
- 1 day
- 2 days

18. During last weekend (Saturday and Sunday) you ate snacks that you got from... (complete the sentence with all that apply)

- At home
- At McDonalds, Burger King, Taco Bell or Dunkin Donuts
- At a different restaurant
- At a corner store
- Food truck
- Vending Machine
- Store in someone’s house
- Gas Station
- I didn’t eat snacks
- Other

II. Personal Information (For Adolescent Girl)

1. What grade are you in?

- 3rd
- 4th
- 5th
- 6th
- 7th

2. How many people live or stay in your household?

- 2 or Less
- 3-4
- 5-6
- 7 or more
3. How many *children* under 18 live or stay in your household?
   
   1 2 3 4 5 or more

4. Has the doctor or nurse ever told you that you have any of the following? (Check all that apply to you)

   Diabetes  Allergies  Asthma  Other  __________  None

5. Do you get money from your parent that you use to buy snacks (food outside of breakfast, lunch and dinner)?

   Yes  No  I didn't buy snacks

6. How much money did you spend last week on snacks (food outside of breakfast, lunch and dinner)?

   0-$4.99  $5-10  $10-$15  $15-$20  More than $20  I did not get money to buy snacks

7. Who does most of the cooking in your household?

   Me  My parent  My sister/brother  My Grandparent  Other  No One
Eating Habits Questionnaire

Please take a few minutes to fill out this survey we can read the questions to you if you need more help. Thank you for your time!

III. General Eating Habits (For Parent)

1. How many days last week (Monday-Friday) did you eat breakfast?
   - None
   - 1-2 days per week
   - 3-4 days per week
   - 5 days per week

2. Where did you eat breakfast during the week (Monday-Friday)? Circle all that apply
   - At home
   - At McDonalds, Burger King, Taco Bell or Dunkin Donuts
   - At a different restaurant
   - At a corner store
   - Food truck
   - Vending Machine
   - Store in someone’s house
   - Gas Station
   - I didn’t eat breakfast
   - At work
   - Other

3. How many days last weekend (Saturday and Sunday) did you eat breakfast?
   - None
   - 1 day
   - 2 days

4. Where did you eat breakfast last weekend (Saturday and Sunday)? Circle all that apply
   - At home
   - At McDonalds, Burger King, Taco Bell or Dunkin Donuts
   - At a different restaurant
   - At a corner store
   - Food truck
   - Vending Machine
   - Store in someone’s house
   - Gas Station
   - I didn’t eat breakfast
   - At work
   - Other
APPENDIX B (continued)

5. How many days last week (Monday- Friday) did you eat dinner?
   
   - None
   - 1-2 days per week
   - 3-4 days per week
   - 5 days per week

6. Where did you eat dinner last week (Monday-Friday)? Circle all that apply
   
   - At home
   - At McDonalds, Burger King, Taco Bell or Dunkin Donuts
   - At a different restaurant
   - At a corner store
   - Food truck
   - Vending Machine
   - Store in someone’s house
   - Gas Station
   - I didn’t eat dinner
   - At work
   - Other

7. How many days during the weekend (Saturday-Sunday) did you eat dinner last week?
   
   - None
   - 1 day
   - 2 days

8. Where did you eat dinner last weekend (Saturday and Sunday)? Circle all that apply
   
   - At home
   - At McDonalds, Burger King, Taco Bell or Dunkin Donuts
   - At a different restaurant
   - At a corner store
   - Food truck
   - Vending Machine
   - Store in someone’s house
   - Gas Station
   - I didn’t eat dinner
   - At work
   - Other

9. Who did you eat breakfast with last week (Monday- Friday)? (Circle all that apply)
   
   - By myself
   - With my daughter
   - With other family
   - With friends
   - Other
   - I didn’t eat breakfast


APPENDIX B (continued)

10. Who did you eat dinner with last week (Monday- Friday) (Circle all that apply)?

<table>
<thead>
<tr>
<th></th>
<th>By myself</th>
<th>With my daughter</th>
<th>With other family</th>
<th>With friends</th>
<th>Other</th>
<th>I didn’t eat dinner</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

11. How many days during last week (Monday- Friday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?

<table>
<thead>
<tr>
<th></th>
<th>1-2 days last week</th>
<th>3-4 days last week</th>
<th>5 days last week</th>
<th>I didn’t eat fast food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

12. How many days last weekend (Saturday and Sunday) did you eat fast food like McDonalds, Taco Bell, Burger King, Dunkin Donuts?

<table>
<thead>
<tr>
<th></th>
<th>No days per week</th>
<th>1 day per week</th>
<th>2 days per week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

13. Which fast food store did you get food from last week (Monday-Friday)?

<table>
<thead>
<tr>
<th></th>
<th>McDonalds</th>
<th>Taco Bell</th>
<th>Burger King</th>
<th>Dunkin Donuts</th>
<th>Other</th>
<th>I didn’t eat fast food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

14. Please list below the fast food items (main dish, side dish and drink) that you purchased last week

<table>
<thead>
<tr>
<th>Main dish (such as Big Mac, Whopper)</th>
<th>Side dish (such as French fries, apple fries)</th>
<th>Drink (such as pop, juice)</th>
<th>Other</th>
<th>I didn’t eat fast food</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

15. How many days last week (Monday-Friday) did you eat snacks?

<table>
<thead>
<tr>
<th></th>
<th>1-2 days per week</th>
<th>3-4 days per week</th>
<th>5 or days times per week</th>
<th>I didn’t eat snacks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

16. During last week (Monday- Friday) you ate snacks that you got from... (complete the sentence with all that apply)

<table>
<thead>
<tr>
<th></th>
<th>At home</th>
<th>At McDonalds, Burger King, Taco Bell or Dunkin Donuts</th>
<th>At a different restaurant</th>
<th>At a corner store</th>
<th>Food truck</th>
<th>Vending Machine</th>
<th>Store in someone’s house</th>
<th>Gas Station</th>
<th>I didn’t eat snacks</th>
<th>At work</th>
<th>Other</th>
</tr>
</thead>
<tbody>
<tr>
<td>Circle</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
APPENDIX B (continued)

17. How many days last weekend (Saturday-Sunday) did you eat snacks?

- None
- 1 day
- 2 days

18. During last weekend (Saturday and Sunday) you ate snacks that you got from... (complete the sentence with all that apply)

- At home
- At McDonalds, Burger King, Taco Bell or Dunkin Donuts
- At a different restaurant
- At a corner store
- Food truck
- Vending Machine
- Store in someone’s house
- Gas Station
- I didn’t eat snacks
- At work
- Other

IV. Personal Information (For Parent)

1. What is your current marital Status?

- Single
- Divorced/Separated
- Married
- Widowed
- Living with another
- Re-married
- Would rather not say

2. What is the highest level of education you have completed?

- Grammar School
- High School
- Vocational/Technical School (2 years)
- Some College
- Associate’s Degree
- Bachelor’s degree
- Master’s degree or higher
- Other

3. How many people live in your household?

- 2 or Less
- 3-4
- 5-6
- 7 or more

4. How many children under 18 live in your household?

- 1
- 2
- 3
- 4
- 5 or more
APPENDIX B (continued)

5. Has the doctor or nurse ever told you that you have any of the following? (Check all that apply to you)
   - High Blood Pressure
   - Diabetes
   - High Cholesterol
   - Cancer
   - Heart Disease
   - Asthma
   - Stroke
   - Other
   - __________

6. What is your current yearly household income?
   - Under $10,000
   - $10,000-$29,999
   - $30,000-$49,999
   - $50,000-$79,999
   - $80,000 or Over
   - Would rather not say

7. Do you get additional financial assistance (Circle all that apply to you)
   - TANF/Welfare
   - WIC
   - SNAP/LINK/Food Stamps
   - Disability
   - Medicare
   - Medicaid
   - Social Security
   - None
   - Other

8. Are you currently?
   - Employed
   - Unemployed
   - Working full time
   - Working part time
   - Lost your job in the last year
   - On disability
   - Other

9. Who does most of the cooking in your household?
   - Me
   - My daughter/son
   - My mother/father
   - My spouse/significant other
   - Other
   - No One

10. How much pocket money did you give your daughter last week?
    - 0-$4.99
    - $5-10
    - $10-$15
    - $15-$20
    - More than $20
    - I did not give my daughter pocket money
APPENDIX C

We Want to Hear From You

Are you the parent of an African American girl between the ages of 10-12?

We want to know what girls and their parents eat?

Call Monique Collins

To see if you can participate in this research study

Participants may be eligible for cash reimbursements.

Principal Investigator:

Monique Collins

845 S. Wood Chicago IL, 60612
APPENDIX D

Face to Face Recruitment Script

Hi my name is Monique Collins. I am a doctoral student in the College of Nursing at the University of Illinois at Chicago. I’m interested in learning more about the eating habits of parents and their African American daughters. I want to know what parents and their daughters eat, where they eat and who they eat with. The girls must be between the ages of 10-12 and be able to answer a questionnaire. If you are interested in participating please let me know. There are four questions I have to ask you to see if you are eligible to participate in the study.

Telephone Recruitment Script

Hi my name is Monique Collins. I am a doctoral student in the College of Nursing at the University of Illinois at Chicago. Are you calling in response to the study flyer? I’m interested in learning more about the eating habits of parents and their African American daughters. I want to know what parents and their daughters eat, where they eat and who they eat with. The girls must be between the ages of 10-12 and be willing to participate. If you are interested in participating please let me know. There are four questions I have to ask you to see if you are eligible to participate in the study.

If the subject is eligible face to face consent, permission and assent will be obtained, the portion size pictures will be given to the subjects at that time and a time for phone interview will be established.
APPENDIX E
University of Illinois at Chicago

Research Information and Consent for Participation in Social Behavioral Research

The relationship between ecological variables and eating behaviors among early adolescent African American girls and their parents

You are being asked to participate in a research study. Researchers are required to provide a consent form such as this one to tell you about the research, to explain that taking part is voluntary, to describe the risks and benefits of participation, and to help you to make an informed decision. You should feel free to ask the researchers any questions you may have.

Principal Investigator Name and Title: Monique Collins PhD Student
Department and Institution: College of Nursing, University of Illinois at Chicago
Address and Contact Information: 845 S. Damen Ave. Chicago, IL 60612 (312) 860-0661
Sponsor: Sigma Theta Tau Alpha Lambda Chapter

Why am I being asked?

You are being asked to be a subject in a research study about what you choose to eat, where you eat and who you eat breakfast, lunch, dinner and snack with. You are also being asked to give permission for your daughter to participate in the study.

You have been asked to participate in the research because you are older than 21, have an African American daughter between the age of 10-12 and may be eligible to take part in the study.

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future dealings with the University of Illinois at Chicago. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

Approximately 200 subjects may be involved in this research at UIC.

What is the purpose of this research?

Researchers are trying to learn more about what you and your daughter choose to eat for breakfast, lunch, dinner and snack. Researchers would also like to know how often you eat breakfast, lunch, dinner and snacks with your daughter and where you and your daughter eat breakfast, lunch and dinner.
APPENDIX E (continued)

**What procedures are involved?**

This research will be performed during a one time visit on the phone or at a site such as: North Riverside or Evergreen Plaza shopping mall, Walmart, Trinity Baptist Church or Westside Health Authority at a separate table or room if available.

The study procedures are as follows:

1. Your daughter will complete the assent process. This should take about 5 minutes. You and your daughter’s eligibility to participate will be determined.
   You and your daughter will complete the following questionnaires separately.

2. Complete the Demographic Questionnaire. This asks questions about your health, who you live with and your income. This should take about 10 minutes.

3. Complete the Eating Habits Questionnaire. This questionnaire asks questions about how often you eat, where you eat and who you eat breakfast, lunch, dinner and snacks with. This should take about 10 minutes.

4. Complete the Block Kids 2004 Food Frequency Questionnaire. This questionnaire asks questions about the kinds of foods you ate and how much you ate. This should take about 25 minutes.

**What are the potential risks and discomforts?**

To the best of our knowledge, the things that you and your daughter will be doing have no more risk of harm than you would experience in everyday life. You may have concern about the foods that you ate last week, however, the risk of this may be small.

**Are there benefits to taking part in the research?**

You may not directly benefit from participation in the research. You will receive healthy eating materials that may help you to make healthy food choices. This study is designed to learn more about the eating habits of African American girls and their parent. This information may help researchers to create programs to decrease obesity in African American children.

**What other options are there?**

You have the option to not participate in this study.

**What about privacy and confidentiality?**
The people who will know that you are a research subject are members of the research team. Otherwise information about you will only be disclosed to others with your written permission, or if necessary to protect your rights or welfare or if required by law.

Study information which identifies you like the consent form signed by you will be looked at and/or copied for checking up on the research by UIC Office for the Protection of Research Subjects. No other information such as the questionnaires that you fill out can identify you because they will only have code numbers, no identifiable information. All information will be stored in locked file cabinets and destroyed one year after the principal investigator’s graduation.

When the results of the research are published or discussed in conferences, no information will be included that would reveal your identity.

**What are the costs for participating in this research?**

There are no costs to you for participating in this research.

**Will I be reimbursed for any of my expenses or paid for my participation in this research?**

You will receive $20.00 after completion of all questionnaires related to the study. Your daughter will receive $10.00 after completion of all questionnaires related to the study.

**Can I withdraw or be removed from the study?**

If you decide to participate, you are free to withdraw your consent and discontinue participation at any time. None of the information collected from you will be used in the study should you chose to discontinue participation.

The Researchers also have the right to stop your participation in this study without your consent if they believe it is in your best interest.

In the event you withdraw or are asked to leave the study, you will not be compensated as described above.

**Who should I contact if I have questions?**

Contact the researchers Monique Collins, PhD Student at or Barbara Dancy, RN, PhD at or email address mcolli4@uic.edu:

- if you have any questions about this study or your part in it,
- if you have questions, concerns or complaints about the research.
APPENDIX E (continued)

What are my rights as a research subject?

If you feel you have not been treated according to the descriptions in this form, or if you have any questions about your rights as a research subject, including questions, concerns, complaints, or to offer input, you may call the Office for the Protection of Research Subjects (OPRS) at 312-996-1711 or 1-866-789-6215 (toll-free) or e-mail OPRS at uicirb@uic.edu.

Remember:

Your participation in this research is voluntary. Your decision whether or not to participate will not affect your current or future relations with the University. If you decide to participate, you are free to withdraw at any time without affecting that relationship.

Signature of Subject or Legally Authorized Representative

I have read (or someone has read to me) the above information. I have been given an opportunity to ask questions and my questions have been answered to my satisfaction. I agree to participate in this research and I give permission for my daughter to participate in this research. I will be given a copy of this signed and dated form.

________________________________________  __________
Signature                                    Date

________________________________________
Printed Name

________________________________________  __________
Signature of Person Obtaining Consent        Date (must be same as subject’s)

________________________________________
Printed Name of Person Obtaining Consent
APPENDIX F
University of Illinois at Chicago

ASSENT TO PARTICIPATE IN RESEARCH

The relationship between ecological variables and eating behaviors among early adolescent African American girls and their parents

1. My name is [identify yourself to the child by name].

2. We are asking you to take part in a research study because we are trying to learn more about what you choose to eat for breakfast, lunch, dinner and snacks during the week and weekend.

3. If you agree to be in this study you will answer questions about where you live, what types of food you eat and where and when you eat.

4. The risks to participating in this study are that you will be asked to recall the foods that you have eaten in the last week.

5. This will help us to understand the eating behaviors of African American girls and their parents.

6. Please talk this over with your parents before you decide whether or not to participate. We will also ask your parent to give their permission for you to take part in this study. But even if your parent says “yes” you can still say no, you don’t want to be in this study.

7. If you don’t want to be in this study, you don’t have to participate. Remember, being in this study is up to you and no one will be upset if you don’t want to participate or even if you change your mind later and want to stop.

8. You can ask any questions that you have about the study. If you have a question later that you didn’t think of now, you can call meat (312) 860-0661.

9. Signing your name at the bottom means that you agree to be in this study. You and your parents will be given a copy of this form after you have signed it.

________________________________________  __________________
Name of Subject  Date

________________________________________  ______  ______
Signature  Age  Grade in School
May 18, 2010

Monique Collins, MS
Health Systems Science
845 S Damen
M/C 802
Chicago, IL 60612
Phone: (312) 860-0661 / Fax: (773) 538-4060

RE: Protocol # 2010-0415
“The Relationship Between Ecological Variables and Eating Behaviors Among Early Adolescent African American Girls and Their Parents”

Dear Ms. Collins:

Your Initial Review application (Response To Modifications) was reviewed and approved by the Expedited review process on May 13, 2010. You may now begin your research.

Please note the following information about your approved research protocol:

Please remember to submit a revised Appendix P adding research assistants prior to their involvement in research activities. The revised Appendix P must be accompanied by an Amendment form when submitted to the UIC IRB.

Protocol Approval Period: May 13, 2010 - May 12, 2011
Approved Subject Enrollment #: 200
APPENDIX G (continued)

Additional Determinations for Research Involving Minors: The Board determined that this research satisfies 45CFR46.404, research not involving greater than minimal risk. Therefore, in accordance with 45CFR46.408, the IRB determined that only one parent's/legal guardian's permission/signature is needed. Wards of the State may not be enrolled unless the IRB grants specific approval and assures inclusion of additional protections in the research required under 45CFR46.409. If you wish to enroll Wards of the State contact OPRS and refer to the tip sheet.

Performance Site: UIC

Sponsor: College of Nursing Internal Research Support Program

PAF#: Not applicable

Grant/Contract No: Not applicable

Grant/Contract Title: Not applicable

Research Protocol:

a) The Relationship between Ecological Variables and Eating Behaviors among Early Adolescent African American Girls and Their Parents; Version 2; 05/10/2010

Recruitment Materials:

a) Face to Face/Telephone Script; Version 1; 04/26/2010
b) Flyer; Version 2; 05/10/2010

Informed Consent:

a) A waiver of documentation has been granted under 45 CFR 46.117 for recruitment purposes only (subjects will volunteer privately identifiable contact information; signed permission and assent will be obtained at enrollment)

Assent:

a) Assent to Participate; Version 1; 04/26/2010

Parental Permission:

a) Consent/Permission; Version 2; 05/10/2010

Your research meets the criteria for expedited review as defined in 45 CFR 46.110(b)(1) under the following specific category:

(7) Research on individual or group characteristics or behavior (including but not limited to research on perception, cognition, motivation, identity, language, communication, cultural beliefs or practices and social behavior) or research employing survey, interview, oral history, focus group, program evaluation, human factors evaluation, or quality assurance methodologies.

Please note the Review History of this submission:
APPENDIX G (continued)

<table>
<thead>
<tr>
<th>Receipt Date</th>
<th>Submission Type</th>
<th>Review Process</th>
<th>Review Date</th>
<th>Review Action</th>
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<tr>
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<td>Initial Review</td>
<td>Expedited</td>
<td>05/06/2010</td>
<td>Modifications Required</td>
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<tr>
<td>05/10/2010</td>
<td>Response To Modifications</td>
<td>Expedited</td>
<td>05/13/2010</td>
<td>Approved</td>
</tr>
</tbody>
</table>

Please remember to:

➔ Use your **research protocol number** (2010-0415) on any documents or correspondence with the IRB concerning your research protocol.

➔ Review and comply with all requirements on the enclosure, "UIC Investigator Responsibilities, Protection of Human Research Subjects"

Please note that the UIC IRB has the prerogative and authority to ask further questions, seek additional information, require further modifications, or monitor the conduct of your research and the consent process.

Please be aware that if the scope of work in the grant/project changes, the protocol must be amended and approved by the UIC IRB before the initiation of the change.

We wish you the best as you conduct your research. If you have any questions or need further help, please contact OPRS at (312) 996-1711 or me at (312) 996-2014. Please send any correspondence about this protocol to OPRS at 203 AOB, M/C 672.

Sincerely,

Sandra Costello

Assistant Director, IRB # 2

Office for the Protection of Research Subjects
APPENDIX G (continued)

Enclosures:

1. UIC Investigator Responsibilities, Protection of Human Research Subjects
2. Assent Document:
   a) Assent to Participate; Version 1; 04/26/2010
3. Parental Permission:
   a) Consent/Permission; Version 2; 05/10/2010
4. Recruiting Materials:
   a) Face to Face/Telephone Script; Version 1; 04/26/2010
   b) Flyer; Version 2; 05/10/2010

cc: Arlene Miller, PhD, RN, Health Systems Science, M/C 802
    Barbara L. Dancy, Health Systems Science, M/C 802
CITED LITERATURE


Chicago Public Schools http://www.cps.edu/Spotlight/Pages/Spotlight48.aspx

Crepinsek, M., & Burstein, N. Maternal employment and children's nutrition.II


http://aspe.hhs.gov/health/reports/child_obesity/


*Dietary guidelines for americans, 2005.* Retrieved March 6, 2011, from

http://www.mypyramid.gov/pyramid/index.html


VITA

Personal Data

Name: Monique A. Reed
Address: Chicago, Illinois 60653
Sex: Female
Mcolli4@uic.edu
Ethnic Origin: African American
Citizenship: U.S.A.
Marital Status: Married w/ Children

Education

<table>
<thead>
<tr>
<th>Institution</th>
<th>Degree</th>
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<tr>
<td>University of Illinois</td>
<td>PhD Candidate</td>
<td>2011</td>
<td>Nursing</td>
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<tr>
<td>College of Nursing, Health Systems Science</td>
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<tr>
<td>DePaul University</td>
<td>MS</td>
<td>2004</td>
<td>Nursing</td>
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<td>Department of Nursing</td>
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<tr>
<td>DePaul University</td>
<td>BA</td>
<td>2000</td>
<td>Economics/ Minor</td>
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Experience

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<tr>
<td>02/11- Present</td>
<td>Adjunct Professor</td>
<td>Chamberlain College of Nursing, Chicago, Illinois</td>
</tr>
<tr>
<td>01/09- 06/11</td>
<td>Adjunct Professor</td>
<td>DePaul University, Department of Nursing, Chicago, Illinois</td>
</tr>
<tr>
<td>2007-2009</td>
<td>Consultant</td>
<td>Westside Health Authority, Chicago, Illinois</td>
</tr>
<tr>
<td>2007-2008</td>
<td>Teaching Assistant</td>
<td>University of Illinois at Chicago, Chicago, Illinois</td>
</tr>
<tr>
<td>2008</td>
<td>Research Assistant</td>
<td>University of Illinois at Chicago, Chicago, Illinois</td>
</tr>
<tr>
<td>2008-2010</td>
<td>Home Health Field Nurse/ Nursing Supervisor</td>
<td>Advanced Home Care, Chicago, Illinois</td>
</tr>
<tr>
<td>2007</td>
<td>Telemetry Nurse</td>
<td>Ingalls Hospital, Harvey, Illinois</td>
</tr>
</tbody>
</table>
2006-2007  Associate Director of Health Promotions  Westside Health Authority, Chicago, Illinois

2004-2006  Research Assistant  UIC/ Westside Health Authority, Chicago, Illinois


Awards & Honors
2010  Helen K. Grace Diversity Award
2010  Dean’s Research Award
2010  Sigma Theta Tau International Honor Society Alpha Lambda Chapter Research Award
2007-2011  GAANN Fellowship
2004-2006  Pre-doctoral Fellowship
2004  Bridges from the Master’s to the Doctorate Award

Professional Activities
Member, Sigma Theta Tau International Honor Society
Member, American Public Health Association
Member, National Black Nurses Association
Member, Illinois Public Health Association
Fellow, Albert Schweitzer Fellowship
Member, Midwest Nursing Research Society

Grants
2007  Project Coordinator/ Writer, Community Healthy Lifestyles Partnership. Funded National Institutes of Health ($250,000)
2006  Project Coordinator, Centering Wellness. Funded Micheal Reese Health Trust ($50,000)
2006  Project Coordinator, Centering Wellness, Funded Visiting Nurses Association Chicago ($60,000)

Licensure
Registered Nurse  # 041.358220

Research
Dissertation Title: The relationship between ecological variables and eating behaviors among early adolescent African American girls and their parent UIC IRB #2010-0415

Pilot Study: Collins Interview Questionnaire UIC IRB #2006-0411

Teaching
2011 (Spring) NR101 Instructor, Transition to Nursing Seminar, Chamberlain College
2011 (Spring) NR226 Clinical Instructor, Fundamentals, Chamberlain College
2011 (Winter, Spring) NSG 230 Lab Instructor, Women’s Health, DePaul University
2010-2011 (Fall, Winter, Spring) NSG 200 Instructor, Nutrition, DePaul University
2009 (Winter, Spring) NSG 302 Clinical Instructor, Introduction to Art & Science of Nursing, DePaul University
2008 (Fall) NUSC 544 Teaching Assistant, Qualitative Methods, University of Illinois at Chicago
2007 & 2008 (Fall) NUSC 210 Lab Instructor, Health Assessment, University of Illinois at Chicago

Presentations

Conferences
December 2008 Metropolitan Healthcare Council of Chicago Clinical Faculty Academy- Participant
November 2007 American Public Health Association- Presenter
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<tr>
<th>Date</th>
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<td>June 2006</td>
<td>Consortium to Lower Obesity in Chicago Children- Attended</td>
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<td>May 2006</td>
<td>Illinois Department of Public Health Health Disparities Symposium-Attended Rosemont, IL</td>
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<td>Chicago Communities in Schools 2nd Annual Nutrition Roundtable-Attended Chicago, IL</td>
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<td>August 2005</td>
<td>Yale University School of Nursing Summer Institute on Family Nursing Research-Participant New Haven, CT</td>
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<td>July 2005</td>
<td>IOM conference to reduce obesity in Chicago adults- Attended</td>
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<td>March 2005</td>
<td>Midwest Nursing Research Society Conference-Attended</td>
<td>Cincinnati, OH</td>
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