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Breakfast Consumption Habits of Youth Living in Low Income Neighborhoods in a
Large Three County Metropolitan Area

by

Elijah Dacy

A THESIS

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Breakfast Consumption Habits of Youth Living in Low Income Neighborhoods in a
Large Three County Metropolitan Area

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University of Nebraska, 2012

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Purpose: The purpose of this study was to identify youth attitudes, frequency of, and barriers for breakfast consumption and the use of available nutrition programs by youth living in poverty or food insecure households in a large three county metropolitan area. **Methods:** A phone survey was developed and tested in order to collect information on breakfast consumption habits and attitudes of children, targeted as food insecure. There were no incentives for persons to participate in the survey and all information gathered was kept in a secure place at the Center for Human Nutrition. Participants who were allowed to answer questions included parents/guardians of eligible children and teens who were old enough and able to answer for themselves. The answers were entered into a database with all personal identifiers removed, with the exception of zip codes for regional identification purposes. The data was then organized and analyzed. **Results:** Responses from parents/guardians to a 53-item survey were collected on 300 children and the data was broken down based on grade in school, number of school aged children, race, gender of respondent, and the county they live in. The data showed that those in need of assistance at breakfast were likely receiving the help they needed from assistance programs including Free/Reduced Breakfast, SNAP, WIC and TANF. Most of the youth from the survey ate breakfast or had it available to them, and there were few barriers for breakfast consumption. **Conclusion:** The data could be used to show the importance of

programs such as Free/Reduced Breakfast to help those who are in the most need. Future studies dividing the children into sixth grade and younger and seventh grade and older may provide more accurate information on these group's attitudes towards breakfast and allow for targeted strategies to be developed to increase breakfast consumption for these groups.

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Chapter 1: INTRODUCTION

Household food security, as defined by the USDA, is having access at all times to enough food for an active, healthy life for all household members (Nord, Andrews, Carlson, 2009). The most recent data on available food security was collected by the USDA for the year 2008. Nationally, the rates were eighty-five percent of American households being food secure throughout the entire year of 2008, but of the remaining households (14.6 percent) were food insecure at least some time during the year, including 5.7 percent with very low food security—meaning that the food intake of one or more household members was reduced and their eating patterns were disrupted at times during the year because the household lacked money and other resources for food. Prevalence rates of food insecurity and very low food security were up from 11.1 percent and 4.1 percent, respectively, in 2007, and were the highest recorded since 1995. The typical food-secure household spent 31 percent more on food than the typical food-insecure household of the same size composition. Fifty-five percent of all food-insecure households participated in one or more of the three largest Federal food and nutrition assistance programs during the month prior to the 2008 survey (Nord, Andrews, and Carlson, 2009).

For the state of Nebraska the average rate of food insecurity for 2006 to 2008 was 10.4 percent. This is an increase of 0.1 percent from the average in 2003 to 2005. This is also the highest since 1995 when the average was 8.5 percent. Very low food security for 2006 to 2008 was 4.0 percent, which is not a change from 2003 to 2005 (Nord, Andrews, Carlson, 2009). Nebraska's food insecurity rates have been on the rise since the data was

first collected in 1995, but when compared to the rest of the United States they are lower in both low food security and very low food security. Nebraska's rates of food insecurity are lower than most of its neighboring states, with the exceptions of South Dakota and Wyoming. Although the rates are lower in Nebraska, the fact is that the rates were much lower in 1995, it is important to focus efforts on reducing the rate of food insecurity to those levels again. The ultimate goal would be to get the rate down to zero, but that is a difficult task that should be the focus of another project.

Based on a report released by the Center for Human Nutrition on the states of Nebraska and Iowa, and based on the most up to date information coming from 2008, they found that there is no existing data for Douglas and Sarpy counties on the percentages of households with low or very low food security. This same report also noted that there was no data available about the percentage of children with low or very low food security (The Center for Human Nutrition, 2010). Although there is no definitive data about food security in children, there is data about the use of government sponsored food aid programs. In Douglas county there are 23,714 persons under 18 years of age that are participating in the Supplemental Nutrition Assistance Program (SNAP) which is 18 percent of the total participation in SNAP, with another 14,889 eligible youth not participating in the program. Another possible indicator of potential food insecurity is participation in the free/reduced lunch programs. In 2008 thirty eight percent of students in Douglas County were eligible to participate in the program. For Sarpy County the rates are much lower than in Douglas County. Only 2,635 persons under the age of 18 were participating in SNAP in 2008 with only 7.0 percent of all participants in

SNAP being under the age of 18. The number of eligible youth not participating in SNAP was 3,791, with 3,635 participating in Free/Reduced Lunch. Of all the students attending elementary, middle, and high schools only 18 percent were eligible for Free/Reduced Lunch (The Center for Human Nutrition, 2010).

Persons who use or need assistance from the government usually fall into the category of those in poverty. Poverty as defined in Webster's Dictionary is the state of one who lacks a usual or socially acceptable amount of money or material possessions, it also defined as debility due to malnutrition (Merriam-Webster, 2010). According to the United States Census Bureau in 2009, 14.3 percent of the U.S. population had income below their respective poverty thresholds. The number of people in poverty increased to 42.9 million. The poverty rate in Nebraska in 2009 was 12.9 percent, which is an increase from 10.8 percent in 2008 (Bishaw & Macartney, 2010). According to the U.S. Census Bureau, Small Area Estimates Branch 2008 Poverty and Median Income Estimates there are an estimated 59,511 people living in poverty in Douglas County. Of these 59,511 it is estimated that 19,669 are children less than 18 years of age. In Sarpy County there are an estimated 7,971 people living in poverty and 3,022 are believed to be children less than 18 years of age ("Small Area Income," 2009).

There is plenty of information about overall rates of food-insecurity and the rates of poverty, but there is a need for an in-depth look at the county level. The purpose of this study was to identify youth attitudes, frequency of, and barriers for breakfast consumption and the use of available nutrition programs by youth living in poverty or food insecure households in a large three county metropolitan area. It is hypothesized

that there is a significant number of youth who do not consume breakfast the majority of days in the week and those who are eligible to participate in free breakfast are not participating in the program. The objectives of this study were to determine the attitudes of food insecure youth and their parents regarding breakfast consumption. The second objective was to determine the frequency of breakfast consumption in food insecure youth, and the final objective was to identify the barriers of food insecure youth in regards to breakfast consumption.

Chapter 2: REVIEW OF LITERATURE

Increasing breakfast consumption and reducing food insecurity in children are important parts in the fight against childhood obesity, which has drawn the focus of both the First Lady and the President of the United States of America. In Douglas, Sarpy, and Pottawattamie Counties it is unknown whether school breakfast programs are being utilized by children who are suffering from food insecurity. Assessing this information will highlight the need to make changes or, if no changes are needed, shift the focus of available programs towards other areas in the fight against childhood obesity.

Benefits of Available Nutrition Programs

One common program used in many schools is the National School Lunch Program. In a study done by Hernandez, Francis and Doyle (2011) they were trying to identify if low-income children in grades K-5 were participating in the free and reduced lunch program. If the child did participate did they have a normal BMI in 8th grade? They collected data on 574 girls and 566 boys participating in the Early Childhood

Longitudinal Study, Kindergarten Cohort and were from low-income families. The students were followed until they reached 8th grade and then all data was analyzed. The results showed that the girls had rapid weight gain, but this was not true for the boys. This shows the results of just one study in Pennsylvania, which may not be representative of the state of Nebraska or even the United States as a whole. It also shows that there is a need to examine other programs as well.

In a review of research into school-based obesity prevention programs Kropski, Keckly and Jensen (2008) were trying to examine the effectiveness of these programs in reducing obesity. To conduct their review they found 14 articles that covered obesity prevention programs in a wide variety of areas of focus. Based on the results from these studies they concluded that programs that are based on social learning tend to be best for girls, while programs that are more structured and enable physical activity are better for boys. They finished by stating that high-quality evaluation protocols are a must for any future programs. The difference between what works for boys and what works for girls is important to note for any program being developed to target these specific audience.

On the other side of the spectrum from obesity is food insecurity, and in particular one program that was implemented in Milwaukee, WI was Universal Free Breakfast. The results from the implementation of this program were published by Lent and Emerson with the Hunger Task Force (2002). They found that the program increased accessibility and increased participation by 240%. Six out of ten teachers reported that students who participated in the program had better behavior, increased attendance, and decreased tardiness. Based on the analysis of the program they made several

recommendations for improving the program that included outreach to parents to increase awareness, gaining community support, offer a variety of fresh fruits and monitor staff for satisfaction with the program. This program is a good starting point and potential model for other school systems interested in addressing breakfast and food insecurity.

Effects of Food Insecurity

In addition to being associated to obesity, food insecurity has been tied to other chronic diseases. In a study done by Seligman, Laraia, and Kushel (2010) who attempted to evaluate the associations between food insecurity and to objectively measure cardiovascular risk factors. Seligman, et al, observed a lack of clinical data and a reliance on self-reported data in previous studies. They felt that there was a need for follow up on these risks and that there was a need for more clinical and valid data. To perform their study they reviewed all data collected by NHANES from 1999 to 2004 and narrowed their population to include persons between 18 and 65 years of age, falling at or below 200% of the federal poverty level, and not pregnant. The results showed that among nonelderly adults there is an association between food security status and both hypertension and diabetes. Additionally they found that in cases where food insecurity is high there is an increased prevalence of diabetes. They did make sure to mention that there could have been multiple outside causes for these phenomena. Food insecurity and poverty both work with these outside phenomena and could be addressed (Seiligman, et al., 2010)

To continue the exploration of the effects of food insecurity on nutrition, Widome, Neumark-Sztainer, Hannan, Haines and Story (2009) conducted a study to

assess barriers to healthy eating as well as the availability of healthy and unhealthy foods among food –secure and food insecure adolescents. They performed this study because there is little research into how food insecurity may affect the frequency of eating fast food, breakfast, and the number of family meals. The researchers surveyed 4,746 middle and high school students from 31 primarily urban schools in Minneapolis-St. Paul, MN, during the 1998-1999 academic year. The surveys were completed by the students in-class, and included questions on benefits and barriers to healthy eating, food availability, and food security” (Widome, et al., 2009). The results showed that 8.4% of adolescents had gone hungry at least once in the last year and another 4.4% stated that they did not have enough to eat at home sometimes or often. Food insecure persons consumed more calories from fats, did not eat breakfast as often, and had fewer family meals, and those with the highest BMI’s had experienced hunger “some” of the months.

To add more information about the risks that food insecurity poses to the health of children, Cook, Frank, Levenson, Neault, Heeren, Black, Berkowitz, Casey, Meyers, Cutts, and Chilton (2006) conducted a study on inner city children, less than 36 months of age, have increased odds of adverse health outcomes if they have food insecurity. They performed the study using data gathered from the Children’s Sentinel Nutrition Assessment Program. The results showed that “exposure of infants and toddlers less than 36 months of age to household food insecurity, with and without measurable childhood food insecurity, is associated with greater odds of fair/poor health status and experiencing health problems requiring hospitalization” (Cook, et al., 2006).

Trying to summarize information about food insecurity and development, Cook and Frank (2008) performed a review of the available research. They found that if a person was classified as being in poverty it does not mean that they are also food insecure. Next they concluded that food insecurity affects childhood health and development through decreased nutritional status and increased stress. Finally they concluded that “food insecurity (or analogous earlier measures) is associated with a range of adverse health, growth, and development outcomes in children aged 0–18 years, and presents a high risk to all types of development in poor and near-poor children” (Cook & Frank, 2008).

The effects of food insecurity on academic, social, and physical development was what Jyoti, Frongillo and Jones (2005) were trying to discover when they conducted a longitudinal study using Early Childhood Longitudinal Study-Kindergarten Cohort (ECLS-K). They used the math and reading test to assess academic development, height and weight for physical development, and teacher observations for social development. The results showed that food insecurity had significant effects of social skills, academic performance, and BMI. Additionally they found that if food insecurity was a constant during the study there was an increase in the child’s weight and BMI. From the results it was concluded that “food insecurity is linked to developmental consequences for girls and boys, particularly impaired social skills development and reading performance for girls” (Jyoti, Frongillo, & Jones, 2005). The results show that there are more effects on girls than boys and this should probably be checked in future studies on topics that address nutrition and development.

In addition to the nutritional and meal consumptions effects of food insecurity there are also developmental effects. Rose-Jacobs, Black, Casey, Cook, Cutts, Chilton, Heeren, Levenson, Meyers, and Frank (2006) conducted a study to see if there was any association between household food insecurity and developmental problems in children less than three years of age. They collected data from 2010 child and caregiver pairs from one of five cities that were visiting a primary care clinic or emergency room. In their results they found that 21% of participants had food insecurity, and of those six percent had hunger as well. Out of all the participants 14% had been identified to be at developmental risk. Rose-Jacobs, et al. concluded that there was an association between food insecurity and developmental risks for children under the age of three. It would be interesting to see if this conclusion holds true if it were conducted at a wide variety of pediatric and primary care centers nationwide.

A study conducted by Bronte-Tinkew, Zaslow, Capps, Horowitz, and McNamara (2007) looked beyond the effects of food insecurity and looked at how it influences people psychologically. They conducted their study to test if food insecurity is associated with physical health and nutritional status. They used information gathered from the Early Childhood Longitudinal Study-Before Kindergarten (ECLS-B), which started with babies at nine months of age instead of kindergarteners in the ECLS-K. The results showed that there was a significant indirect association between feeding practices and food insecurity status. Additionally they found that in a food insecure household parents are more likely to report their child's health as poor-to-fair and are more likely to have

hospital visits. Their research helps support previous findings and offers potential pathways to be investigated.

Obese/Overweight and Food Insecurity

In a study done by Rose and Bodor (2006) in which they were attempting to add more information about the relationship between food insecurity and overweight status in children. They conducted their research by reviewing data collected from the ECLS-K. From this data they found that about nine percent of children lived in food insecure households, and 85% of food insecure children were below 185% of the poverty threshold (Rose & Bodor, 2006). Additionally 11.2% of girls were overweight and 11.8% of boys were as well. They concluded that “household food insecurity was not associated with a higher prevalence of overweight status among young school children” (Rose & Bodor, 2006). Although this study had a large sample size one would question the use of BMI as the indicator of overweight status, because growth charts are a better indicator of weight status in children.

In addition to research on insecurity and overweight status in children there has been research into food insecurity and weight change in adults. Wilde and Peterman (2006) conducted a study to add to current information about weight change associated with food security in all members of households. They were looking to “provide longitudinal information on both weight and food security status” (Wilde & Peterman, 2006). To conduct their research they examined data from the 1999-2002 National Health and Nutrition Examination Survey (NHANES). From their analysis of the data they found that if a household has intermediate levels of food insecurity women appear to

have higher rates of obesity, weight gain over 12 months in which weight gain increased as the food insecurity worsened. Eventually the weight gain did plateau, but this may have been caused by the decrease in overall caloric intake since the highest levels of food insecurity include hunger.

Studies done on a national level offer large sample sizes, but are not necessarily reflective of a specific state, county or city. Martin and Ferris (2007) felt that they needed to conduct a study because there has only been a small amount of research done on childhood overweight and food insecurity, and that the majority looked primarily at Latino participants. For their study they “wanted to examine the relationships between adult obesity, childhood overweight, and household food insecurity in Hartford, CT” (Martin & Ferris, 2007) . They collected a convenience sample of 199 parents and their 212 children aged 2-12 years of age from December 2003 to September 2004, and measured food security using the USDA Food Security Module and collected measurements of height and weight of parents and children. From their analysis they found that if an adult was food insecure they were more likely to be obese, and an obese parent increased the probability of a girl being overweight. This study lumped all of their participants into one large group and did not examine whether or not the various levels of poverty had any effect on the status of the participants.

To help continue the study of the relationship between food insecurity and obesity Lohman, Stewart, Gunderson, Garasky, and Eisenmann (2009) conducted a study to “examine the independent relationships and interactions between food insecurity, individual, maternal, and family stressors, and overweight or obesity in a sample of low-

income predominately minority adolescents. Interviews conducted as part of the Welfare, Children, and Families: A Three City Study was used in the analysis. A total sample size of 1011 randomly selected households with poverty rates of at least 40% and adolescents 10 to 15 years of age was used. After data analysis they found no association between adolescents having an overweight status and food insecurity. They consistently found that “maternal stress with food insecurity increases the chances of a child being overweight or obese, and a direct relationship between individual stressors and adolescent obesity” (Lohman, et al., 2009). One limitation that would have been interesting to have eliminated was the fact that the mothers of the children were providing the answers to the questions.

In a study done by Gundersen, Garasky, and Lohman (2009) they were trying to find the relationship between food insecurity and childhood obesity using several different measures to test for obesity. They reviewed data collected from the NHANES from 2001 to 2004. They separated the participants into either obese or nonobese based on BMI plotted on CDC growth charts, waist circumference, triceps skinfold, trunk fat mass, and percent body fat. The subjects were then separate into either food secure or food insecure based upon responses from the survey. After analysis they found that nearly 37% of the households were food insecure and for the five measures of childhood obesity, the range of obese children varied from 15 to 45%. Additionally they found that food-insecure children were no more likely to be obese than their food-secure counterparts across the five measures of obesity. From this data they concluded that food insecurity and childhood obesity were not associated for children between the ages of

eight and seventeen in households with incomes 200% of the poverty line but they also noted that this could change depending upon what measure you use for obesity (Gundersen, et al, 2009).

In another study that adds to the information about overweight status in children Metallinos-Katsaras, Sherry, and Kallio (2009) conducted a study on household food security and its relationship with low income children five years of age and younger. They gathered demographic, anthropometric, food security, and other health related data from November 1998 through December 1999 on children and mothers from low-income families, participating at one of nine Special Supplemental Nutrition Programs for Women, Infants, and Children (WIC) clinics in Massachusetts. They had a total of 8,493 participants and found there were relationships between household food security and age and sex. Based on this information they were able to conclude from the study that household food insecurity is associated with overweight prevalence in low-income ethnically and racially diverse girls (Metallinos-Katsaras, et al., 2009). These findings are consistent with other studies and should be considered and rechecked for in future studies.

Breakfast

An important part of daily nutritional intake is breakfast. The importance of breakfast has been established and the goal of Rampersaud, Pereira, Girard, Adams, and Metz (2005) was to review and summarize the literature examining the associations between breakfast, nutritional adequacy, body weight and cognitive and academic performance. To perform this review they “collected 47 articles, 22 from the United

States, nine were related to nutritional adequacy, 16 related to weight, and 22 related to cognitive or academic performance. Upon completion of the review they concluded that breakfast consumption significantly contributes to whole- diet nutrient adequacy. Additionally missing breakfast was seen most often in overweight and obese children. This review showed that there are very few studies, 27 on nutrition and weight, on the topic of nutrition and breakfast showing the need for further research on the topic (Rampersaud, 2005).

To further show the nutritional importance of breakfast Chitra and Reddy (2006) performed a study to find the breakfast habits of 10-15 year old Indian children, and how nutritional quality of the breakfast affects the meal quality of other meals throughout the day. To conduct their study they administered and evaluated one week 24 hour diet recalls to 802 school children. They then analyzed the data for nutrient quality. The results showed that 57.2% of participants skipped breakfast at least once during the week. Additionally they showed that those who ate breakfast consumed more calories and protein, and that those who skipped breakfast did not consume more in their other meals to make up the difference. For all populations breakfast is important, but for this age group it is even more important given that this is a time of high energy and protein use for growth.

Matthys, De Henauw, Bellemans, De Maeyer, and De Backer (2006) were interested in expanding what was known about breakfast habits and nutrition status of adolescents when they conducted their research. The purpose of their study was to assess how to take nutrition guidelines and make them more everyday user friendly. To conduct

the research they collected seven day food recalls and anthropometric data from 341 randomly selected adolescents in secondary schools. The results showed that the “nutritional profile of Belgian adolescents could be substantially improved by the consumption of breakfast in a family setting on a daily basis, consisting of a variety of foods, namely whole-grains, fruits, and (semi-)skim milk” (Matthys, De Henauw, Bellemans, De Maeyer, & De Backer, 2006). Although this study was conducted in Belgium, the eating habits seem to be similar to those of American adolescents and the results could be applied in the United States.

With the increasing need to find more in-depth information into the affects of skipping breakfast, Dubois, Girard, Kent, Farmer, and Tatone-Tokuda (2008) performed a study with the purpose of investigating if children who eat breakfast everyday are more likely to be of normal weight and high diet quality. To perform their research they used data from the Longitudinal Study of Child Development in Quebec. From their analysis they found that those children that ate breakfast everyday also ate more vegetables, grains and dairy, but overall caloric intake was no different for those who ate breakfast everyday and those who did not. Additionally the meals and snacks for those who did not eat breakfast were less nutrient dense and emphasized calories over nutrients, which was associated with increased BMI's for children who skipped breakfast. This helps emphasize the need of children to eat a healthy breakfast every day.

To help children get proper nutrition schools are starting to offer breakfast to help their students get a good start to their day. In order to help add more information about school meal programs and obesity Baxter, Hardin, Guinn, Royer, Mackelprang, and

Devlin (2010) conducted a research project looking into BMI, meal consumption, energy density of the meals, and any differences between school lunch and school breakfast. Data was collected over three school years in fourth grade class rooms at 16 to 17 schools in South Carolina using a validated diet tool. From the data that was collected the researchers found that BMI was not associated with school breakfast and/or school lunch consumption. They did find that location of breakfast consumption had an effect on BMI. The children who ate breakfast in their classroom tended to eat more calories and had higher BMI's.

With the current focus on childhood obesity, and reducing obesity in the United States as a whole, there is a need to look into the role of school meals in combating or adding to this problem. To address this Gleason and Dodd (2009) conducted a study to test the hypothesis that school meal participation influences students' weight, as measured by BMI and indicators of overweight and obesity. They used data collected from School Nutrition Dietary Assessment Study-III to test their hypothesis and to find any other pertinent information about school lunch and breakfast. After analyzing the data they found that students who participated in school breakfast were more likely to have lower BMI's, but this did not hold true for Hispanic students (Gleason and Dodd, 2009). This study added more information on the effectiveness of breakfast on decreasing childhood obesity, and the role that school breakfast programs may have in helping combat childhood obesity.

The purpose of this study was to identify youth attitudes, frequency and barriers for breakfast consumption, and the use of available nutrition programs by youth living in poverty or food insecure households in a large three county metropolitan area.

Chapter 3: METHODS

Before the final analysis, discussion and conclusion sections were started Institutional Review Board approval was obtained from the University of Nebraska-Lincoln to use previously obtained data. The approval letter can be found in Appendix A. To obtain a sample of the food insecure population in Douglas and Sarpy counties in Nebraska and Pottawattamie county Iowa a phone survey was developed by Dr. Amy Yaroch, Lila Rutten, and Kristy Carlson from the Center for Human Nutrition, Sue Arment from Hunger Free Heartland, Elijah Dacy, and Wiese Research. The questions were developed to provide the desired information by all parties that were involved. This researcher was personally contacted and provided questions that were desired to be included in the survey, any overlapping questions were removed before first survey testing.

An initial survey of the sample population was taken to test the survey tool with adjustments being made based on the responses. After initial changes were made the survey was tested again on a different sample population and it was decided that no more changes were necessary. The final version, based on the modifications from the initial test results, was subsequently administered by phone using trained interviewers, some of whom were bilingual, to about 300 participants. To identify potential participants, phone

numbers were identified from information made available from applications for the free and reduced meal programs at schools in the three counties. At the start of the survey persons were identified as either falling into the sample population or not. Those who did not meet the survey criteria of having a child in the household and meeting the quota requirements were thanked for their time and the phone survey was terminated. The survey tool can be viewed in Appendix B.

The survey consisted of 53 questions divided into sections. The first section was the introduction which contained four questions used to make sure that the surveyors met the desired quota. The questions focused on making sure that there were children in the household, collecting demographic information, and that the surveyor was speaking with the correct person to answer questions accurately. The correct person to answer the questions accurately was identified by asking the question, “are you the adult in your household who would be most familiar with the food your children eat?” The second group of questions was on parental perspectives on eating breakfast. There was one question with eight different statements to be evaluated by the parent/guardian. The next group of questions focused on food/breakfast consumption during the school year and the summer months. This section contained a 19 part food frequencies and seven more questions on how often and where breakfast was consumed, and if breakfast was available. The next group of questions was about food availability in the home that contained 23 food items. The next section evaluated was barriers to eating breakfast. There were eight items that were identified as potential barriers to eating breakfast including time to prepare and eat breakfast, and their child’s perceptions on eating

breakfast. The next set of questions measured food insecurity. There were five questions asking if meals were skipped, if there was enough food for everyone, if there wasn't enough food was there enough money to get more. After food security was established the next sets of questions were on participation in food and nutrition service programs. The last group of questions was on demographics, and the final questions were observations about the responder made by the surveyor.

There were no incentives for persons to participate in the survey and respondents could choose not to answer any questions and could terminate the survey at any time. All information gathered was kept in a secure place at the Center for Human Nutrition. Participants who were allowed to answer questions included parents/guardians of eligible children and teens who were old enough and able to answer for themselves.

The survey was available in both English and Spanish in order to allow for as many responses as possible. The answers were entered into a database with all personal identifiers removed, with the exception of zip codes for regional identification purposes. The data was then organized and analyzed by Wiese Research Associates using a chi-squared statistics, frequency distribution, and means. The data was sent to the researcher for this thesis in an excel database with the statistical tests and significance level. The researcher pulled the data that was added to survey for the purpose of this thesis and is reported in the results section. A copy of the data is available upon request.

Chapter 4: RESULTS

Data was collected from 300 adults identified as the person who was most familiar with their children's eating habits. Of the 300 respondents 210 were from Douglas County, 57 from Sarpy County, and 33 from Pottawattamie County. Of the 300 respondents 67 were male and 233 were female. The racial groups present were 235 (78.3%) White, 24 (8%) Black or African-American, 26 (8.7%) Hispanic, five (1.67%) Asian, and four (1.3%) American Indian or Alaska Native. One hundred households were *single-child*, 125 were *two-child household*, 51 were *three-child*, 17 were *four-child*, three were *five-child*, three were *six-child*, and one household had *11 children*. The average was 2.05 children per household. The children were distributed from pre-K through 12th grade. To identify attitudes about breakfast the respondents were asked to respond to the statement "Skipping breakfast is no big deal," 220 *strongly disagreed*, 29 *disagreed*, 28 were *neutral*, 10 *agreed*, and 13 *strongly agreed*. Additionally when broken down based on the child's year in school; PreK-6th, 7th-8th, or 9th-12th, it was observed that there was statistical significance ($\chi^2=22.62$, $p=0.004$). The same was observed among racial groups ($\chi^2=28.42$, $p=0.005$). These responses are in Table 4.1. The table shows that the parents of children Pre-Kindergarten through sixth grade were more likely to *strongly disagree*, and seventh and eighth grade parents were more likely to *disagree* or be *neutral*. Additionally, for the racial groups, whites and others were more likely to *strongly disagree* and the other group was more likely to *strongly agree*. In response to the second statement "Breakfast is the most important meal of the day," 170 *strongly agreed*, 64 *agreed*, 42 were *neutral*, 9 *disagreed*, and 15 *strongly disagreed*.

To get more information on the food security and the use of available assistance programs the respondents were asked to address several statements regarding these topics. The first statement was “The food that we bought just didn’t last and we didn’t have money to get more.” To this eight responded *often true*, 45 responded *sometimes true*, 245 said *never true*, and two *didn’t know*. There was statistical significance for the responses based on racial groups ($\chi^2=57.84, p=0.001$). This data can be seen in Table 4.2. The table shows that the Other racial group was more likely to respond *often true* and the white group was more likely to say *never true*. Next the respondents were asked to evaluate the statement “We couldn’t afford to eat balanced meals.” Eight responded *often true*, 46 responded *sometimes true*, and 246 said *never true*. Again there was statistical significance amongst the racial groups ($\chi^2=18.91, p=0.004$), which can be seen in Table 4.3. Similar to the previous statement the other group was more likely to respond often true and the white group was more likely to say never true. When asked about various support programs; 50 had applied for Supplemental Nutrition Assistance Program (SNAP) benefits, of those 30 had received benefits in the last 12 months. Of those receiving SNAP benefits, 22 were able to make their benefits last 3-4 weeks. After SNAP use was established, the use of the Free/Reduced Lunch program was addressed. Sixty two used the program, 236 did not use the program and two did not know. There was statistical significance among both number of children in the household ($\chi^2=13.53, p=0.009$) and racial group ($\chi^2=53.54, p=0.001$). The data can be found in Table 4.4. The table shows that the more children in the household the more likely the response was *yes*. Also, among the racial groups African-American and Hispanic were more likely to

respond yes as well. Next was participation in the Free/Reduced Breakfast program. Sixty three used the program, 233 did not and four did not know. Again there was statistical significance among both number of children ($\chi^2=13.57, p=0.009$) and racial group ($\chi^2=60.71, p=0.001$) presented in Table 4.5. The table shows that the more children in the household the more likely the response was *yes* to the statement. Also, among the racial groups African-American and Hispanic were more likely to respond *yes* as well. The second to last program covered was Special Supplemental Nutrition Program for Women, Infants, and Children (WIC). Eighteen had used it in the last 12 months and 282 had not, with statistical significance among the racial groups ($\chi^2=15.15, p=0.002$) presented in Table 4.6. The table shows that African-Americans and Hispanics were more likely to say *yes* than the other racial groups. The large number not participating may have been due to lacking qualifications for this program. The last program covered was Temporary Assistance for Needy Families (TANF). Only two had used this program out of the 300 respondents. There was also statistical significance among the racial groups responses ($\chi^2=15.06, p=0.002$) presented in Table 4.7. This table shows that the others racial group was more likely to respond *yes* to the statement than the other racial groups.

To find out more about breakfast consumption habits the respondents were asked to answer “I eat breakfast every day,” 192 *strongly agreed*, 35 *agreed*, 30 were *neutral*, 18 *disagreed*, and 24 *strongly disagreed*. When asked if they expected breakfast to be served to their child every day they attend school, 107 *strongly disagreed*, 25 *disagreed*, 37 were *neutral*, 18 *agreed*, 99 *strongly agreed*, and 14 *didn't know*. When presented

with the statement “I don’t let my child leave the house until they have eaten breakfast,” 39 *strongly disagreed*, 22 *disagreed*, 52 were *neutral*, 50 *agreed*, 135 *strongly agreed*, and two *did not know*. When asked if they try to get their child(ren) to eat breakfast at home 24 *strongly disagreed*, five *disagreed*, 23 were *neutral*, 32 *agreed*, 214 *strongly agreed*, and two *didn’t know*. When asked if they try to get their child(ren) to eat breakfast at school, 152 *strongly disagreed*, 27 *disagreed*, 35 were *neutral*, 24 *agreed*, 47 *strongly agreed* and 15 *didn’t know*.

To get a better idea as to what the respondent’s child(ren) ate for breakfast during the school year they were asked to identify food frequencies, or how often food items were consumed during a week. The food items and the responses can be seen in Table 4.8. There were no significant responses for the food frequencies, but the table does show that there were some items that were consumed at a higher rate than others. After answering the food frequency questions respondents were asked about how often their child(ren) ate breakfast during the school year: 255 said *6-7 times per week*, 25 said *3-5 times per week*, 11 said *1-2 times per week*, six said *rarely*, one said *never* and two *didn’t know*. The next question was directed at the 45 who responded that their child(ren) did not eat breakfast *6-7 times per week*. These 45 were asked how many days per week breakfast was available during the school year: 36 said *6-7 days per week*, six said *3-5 days per week*, one said *rarely*, and two said *never*. The next questions tried to identify where the child(ren) eat breakfast during the school year. Only 299 out of the 300 who participated answered this question: 48 said *at school*, 243 said *at home*, one said *at daycare*, and seven said *on the bus or in the car*.

Once school year breakfast consumption habits were established the questions moved to the time outside of school. The first question was, “on average, how many days per week does your child eat breakfast during the summer months,” 245 said *6-7 times per week*, 40 said *3-5 times per week*, eight said *1-2 times per week*, two said *rarely*, two said *never*, and three *didn't know*. For those that said less than *6-7 times per week* they were asked how often breakfast was available during the summer months: 49 said *6-7 times per week*, four said *3-5 times per week*, one said *rarely*, and one said *never*. The next question looked at where breakfast was eaten during the summer months for the child(ren) who ate breakfast: three said *at school*, 287 said *at home*, six said *at daycare*, one said *on the bus or in the car*, and one said *at a friend or relative's house*. Next food availability questions were asked. The responses are found in Table 4.9. There were some statistically significant responses that are covered in the following tables. At the county level the data shows that the majority of children had meat such as bacon, ham or sausage available at least some of the time at a significant level ($\chi^2=24.51, p=0.002$) presented in Table 4.10. The table shows that respondents from Sarpy County were likely to respond *available most of the time* and less likely to respond *rarely*. Toast, bagels, English muffin etc., were significantly available for all grade levels ($\chi^2=32.02, p=0.001$) additionally, toast, bagels, English muffin etc., were significantly available across the different racial groups ($\chi^2=33.74, p=0.004$) both sets of data are presented in Table 4.11. The table shows that seventh and eighth graders were less likely to respond *available most of the time*, and they were more likely to respond *rarely* as well, when compared to the other groups. Among the racial groups the table shows that whites were

more likely to respond *always available at home*, Hispanics were more likely to respond *sometimes* and *never* available, and the Others group was more likely to respond *rarely* than the other groups. The availability of vegetables were significantly available among the racial groups as well ($\chi^2=33.71$, $p=0.001$) and can be seen in Table 4.12. The table shows that African-Americans were most likely to respond that vegetables were *always available at home* and Hispanics were most likely to respond *sometimes*, *rarely*, and *never available at home*. Next were salty snacks such as chips and crackers: 100 said *always available*, 56 said *available most of the time*, 99 said *sometimes available*, 36 said *rarely*, and nine said *never*. The availability amongst the racial groups appears to be statistically significant ($\chi^2=39.02$, $p=0.001$) as well and can be seen in Table 4.13. The table shows that Hispanics were least likely to respond *always available at home* and most likely to respond *rarely available at home*.

After food frequencies were established the respondents were asked about barriers to breakfast consumption. The responses are located in Table 4.14. When asked if they thought there was not enough time to eat breakfast at home: 163 *strongly disagreed*, 46 *disagreed*, 51 were *neutral*, 18 *agreed*, and 22 *strongly agreed*. There were statistically significant responses among the racial groups ($\chi^2=43.29$, $p=0.001$) and can be found in Table 4.15. The table shows that the whites and the others racial groups were more likely to *strongly disagree* to the statement. The others racial group was most likely to respond *agree*. The Hispanic group was most likely to respond *neutral*. In response to the statement “There isn’t any food for breakfast at my house,” 271 *strongly disagreed*, nine *disagreed*, four were *neutral*, seven *disagreed*, and nine *strongly disagreed*.

The next questions focused on the beliefs of the respondent's child(ren). The first question was "My child thinks eating breakfast might make them fat." In response to this statement 261 *strongly disagreed*, 16 *disagreed*, 10 were *neutral*, three *agreed*, seven *strongly agreed*, and three *didn't know*. Amongst the three grade groups the responses were statistically significant ($\chi^2=28.70$, $p=0.001$), this was also true among the racial groups ($\chi^2=47.06$, $p=0.001$) and can be found in Table 4.16. The table shows that Pre-Kindergarten through sixth grade were more likely to respond *strongly disagree*. The white racial group was most likely to *strongly disagree*, and the Hispanic group was most likely to *agree* with the statement. To the next statement "My child doesn't like to eat in front of other people," 265 *strongly disagreed*, 12 *disagreed*, six were *neutral*, seven *agreed*, nine *strongly agreed*, and one *didn't know*. Again there was a statistical significance among the racial groups ($\chi^2=44.42$, $p=0.001$) presented in Table 4.17. The table shows that Hispanics were least likely to *strongly disagree* and were most likely to *strongly agree*. When asked to evaluate the statement "My child doesn't think it's cool to eat breakfast at school," 180 *strongly disagreed*, 17 *disagreed*, 22 were *neutral*, 11 *agreed*, 23 *strongly agreed*, 47 *didn't know*. The responses were statistical significance among the three groupings for grade in school ($\chi^2=29.44$, $p=0.001$) presented in Table 4.18. The table shows that Pre-Kindergarten through sixth grade were more likely to *strongly disagree* and seventh through eighth graders were more likely to *agree*. In response to the last statement "My child would rather do something else, such as sleep in or hang out with their friends etc., than eat breakfast," 160 *strongly disagreed*, 48 *disagreed*, 32 were *neutral*, 30 *agreed*, 26 *strongly agreed*, and four *didn't know*. There

was statistical significance among the grade levels in school ($\chi^2=28.58$, $p=0.001$) and among the racial groups ($\chi^2=33.30$, $p=0.004$) and can be seen in Table 4.19. The table shows that ninth through twelfth grade were more likely to *agree* and seventh through eighth graders were more likely to respond *strongly agree*. Among the racial groups African-Americans were most likely to *strongly disagree* with the statement.

Table 4.1: Skipping Breakfast No Big Deal¹

Response	Level of Child in School			Racial Group			
	PreK-6th	7 th -8 th	9 th -12 th	White	African-American	Hispanic	Other
Strongly Disagree	120 83%	20 63%	80 65%	180 77%	14 58%	15 58%	7 78%
Disagree	7 5%	6 19%	16 13%	20 9%	5 21%	4 15%	0 0%
Neutral	7 5%	6 19%	15 12%	24 10%	2 8%	2 8%	0 0%
Agree	5 3%	0 0%	5 4%	6 3%	2 8%	1 4%	0 0%
Strongly Agree	5 3%	0 0%	8 6%	5 2%	1 4%	4 15%	2 22%
Chi-Square	22.62			28.42			
p-value	0.004			0.005			

¹ Table 4.1 Shows the statistically significant responses to the statement “Skipping breakfast is no big deal.”

Table 4.2: Food Didn't Last²

Response	Racial Group			
	White	African-American	Hispanic	Other
Often True	3 1%	1 4%	1 4%	3 33%
Sometimes True	27 11%	8 33%	7 27%	2 22%
Never True	205 87%	15 63%	17 65%	4 44%
Don't Know	0 0%	0 0%	1 4%	0 0%
Chi-Square	57.84			
p-value	0.001			

Table 4.3: Can't Afford Balanced Meals³

Response	Racial Group			
	White	African-American	Hispanic	Other
Often True	4 2%	1 4%	1 4%	2 22%
Sometimes True	31 13%	6 25%	6 25%	2 22%
Never True	200 85%	17 71%	19 73%	5 56%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	18.91			
p-value	0.004			

² Table 4.2 shows the statistically significant responses to the statement "The food we bought just didn't last and we did not have money for more."

³ Table 4.2 shows the statistically significant responses to the statement "We can't afford balanced meals."

Table 4.4: Free/Reduced Lunch Use⁴

Response	# of School Age Children			Racial Group			
	1	2	3 or more	White	African American	Hispanic	Other
Yes	11 11%	26 21%	25 33%	30 13%	14 58%	14 54%	3 33%
No	88 88%	98 78%	50 67%	204 87%	9 38%	12 46%	6 67%
Don't Know	1 1%	1 1%	0 0%	1 0%	1 4%	0 0%	0 0%
Chi-Square	13.53			53.54			
p-value	0.009			0.001			

4.5: Free/Reduced Breakfast Use⁵

Response	# of School Age Children			Racial Group			
	1	2	3 or more	White	African-American	Hispanic	Other
Yes	12 12%	27 22%	24 32%	31 13%	14 58%	14 54%	3 33%
No	86 86%	98 78%	49 65%	203 86%	8 33%	11 42%	6 67%
Don't Know	2 2%	0 0%	2 3%	1 0%	2 8%	1 4%	0 0%
Chi-Square	13.57			60.71			
p-value	0.009			0.001			

⁴ Table 4.4 shows the statistically significant responses to the use of the Free/Reduced Lunch program.

⁵ Table 4.5 shows the statistically significant responses to the use of the Free/Reduced Breakfast program.

Table 4.6: Use of WIC⁶

Response	Racial Group			
	White	African-American	Hispanic	Other
Yes	9 4%	4 17%	5 19%	0 0%
No	226 96%	20 83%	21 81%	9 100%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	15.15			
p-value	0.002			

Table 4.7: Use of TANF⁷

Response	Racial Group			
	White	African-American	Hispanic	Other
Yes	1 0%	0 0%	0 0%	1 11%
No	234 100%	24 100%	26 100%	8 89%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	15.06			
p-value	0.002			

⁶ Table 4.6 shows the statistically significant responses for use of the WIC program.

⁷ Table 4.7 shows the statistically significant responses for use of the TANF program.

Table 4.8: Food Frequency⁸

Food Item	Frequency of Item (times per week)					
	6-7	5-3	2-1	Rarely	Never	Don't Know
Eggs	14	61	127	60	37	1
Hash browns, French Fries or other fried potatoes	1	13	63	91	130	2
Bacon, Ham or Sausage	12	50	102	98	36	2
Pancakes, French Toast or Waffles	13	38	147	75	75	23
Toast, Bagels, English muffin, etc	21	87	105	58	24	5
Breakfast bars/granola bars	18	40	91	79	69	3
Sugary Cereals	19	62	84	65	68	2
Non-Sugary Cereals	24	78	74	57	64	3
Oatmeal, Cream of wheat, Grits, etc.	8	50	77	73	90	2
Milk including white, strawberry, and chocolate	195	59	19	9	14	4
100% Fruit Juice	56	96	62	43	40	3
Fruit Drink	11	17	34	66	170	2
Fruits, other than juice	65	95	76	45	17	2
Donuts, Sweet Rolls, Pop-Tarts, Pan Dulce, Muffins, Cakes, and Cookies	6	29	80	124	60	1
Fast Foods	2	5	29	107	157	0
Hot Pockets	1	5	19	54	216	5
Yogurt	27	52	76	74	67	2
Additional items not covered (pizza, cheese, graham crackers, nutritional drink, peanut butter/peanut butter and jelly sandwich, others)	4	10	11	7	0	0

⁸ Table 4.8 shows the food frequency responses.

Table 4.9: Food Availability⁹

Food Item	Availability					
	Always Available	Most of the time	Sometimes	Rarely	Never	Don't know
Eggs	260	23	8	6	3	0
Hash Browns, French Fries or other Fried Potatoes	37	23	105	102	33	0
Bacon, Ham or Sausage	112	52	93	38	5	0
Pancakes, French Toast or Waffles	104	46	11	37	2	0
Toast, Bagels, English Muffins, etc.	193	56	31	14	5	1
Breakfast bars/granola bars	128	52	64	37	19	0
Sugary Cereals	102	48	56	60	34	0
Non-Sugary Cereals	166	43	54	18	19	0
Oatmeal, Cream of Wheat, Grits, etc.	180	45	29	21	25	0
Milk	281	12	6	0	1	0
100% Fruit Juice	138	72	50	26	14	0
Fruit Drinks	48	25	75	85	67	0
Fresh, dried, canned or frozen fruit	247	38	13	2	0	0
Vegetables, fresh, dried, canned or frozen	255	32	9	2	2	0
Donuts, sweet rolls, pop-tarts, pan dulce, muffins, cakes, and cookies	29	14	112	128	17	0
Tortillas or Burritos	75	43	82	67	33	0
Hot Pockets	8	11	37	93	150	1
Yogurt	181	52	61	17	9	0
Whole grain breads and items	185	45	41	19	10	0
Salty snacks	100	56	99	36	9	0
Candy in all forms	51	37	119	77	16	0
Sodas, excluding diets and sports drinks	73	30	62	79	55	1
Sports Drinks	43	40	80	75	62	0

⁹ Table 4.9 shows the Food Availability responses.

Table 4.10: Availability of Breakfast Meats¹⁰

Response	County		
	Douglas	Sarpy	Pottawattamie
Always available at home	82 39%	14 25%	16 48%
Available most of the time	28 13%	20 35%	4 12%
Sometimes	64 30%	21 37%	8 24%
Rarely	31 15%	2 4%	5 15%
Never available at home	5 2%	0 0%	0 0%
Don't Know	0 0%	0 0%	0 0%
Chi-Square	24.51		
p-value	0.002		

Table 4.11: Availability of Breakfast Breads¹¹

Response	Level of Child in School			Racial Group			
	PreK-6h	7 th -8 th	9 th -12 th	White	African American	Hispanic	Other
Always available at home	89 62%	22 69%	82 66%	163 69%	12 50%	9 35%	5 56%
Available most of the time	29 20%	1 3%	26 21%	40 17%	7 29%	5 19%	2 22%
Sometimes	21 15%	2 6%	8 6%	20 9%	3 13%	7 27%	1 11%
Rarely	5 3%	5 16%	4 3%	9 4%	2 8%	2 8%	1 11%
Never available at home	0 0%	1 3%	4 3%	2 1%	0 0%	3 12%	0 0%
Don't Know	0 0%	1 3%	0 0%	1 0%	0 0%	0 0%	0 0%
Chi-Square	32.02			33.74			
p-value	0.001			0.004			

¹⁰ Table 4.10 shows the statistically significant responses to the availability of breakfast meats.

¹¹ Table 4.11 shows the statistically significant responses to the availability of breakfast breads.

Table 4.12 Availability of Vegetables¹²

Response	Racial Group			
	White	African-American	Hispanic	Other
Always available at home	202 86%	22 92%	17 65%	8 89%
Available most of the time	26 11%	2 8%	3 12%	1 11%
Sometimes	6 3%	0 0%	3 12%	0 0%
Rarely	1 0%	0 0%	1 4%	0 0%
Never available at home	0 0%	0 0%	2 8%	0 0%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	33.71			
p-value	0.001			

Table 4.13 Availability of Salty Snacks¹³

Response	Racial Group			
	White	African-American	Hispanic	Other
Always available at home	85 36%	8 33%	3 12%	2 22%
Available most of the time	48 20%	2 8%	5 19%	0 0%
Sometimes	79 34%	8 33%	6 23%	4 44%
Rarely	18 8%	4 17%	11 42%	2 22%
Never available at home	5 2%	2 8%	1 4%	1 11%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	39.02			
p-value	0.001			

¹² Table 4.12 shows the statistically significant responses to the availability of vegetables.

¹³ Table 4.13 shows the statistically significant responses to the availability of salty snacks.

Table 4.14: Statement Responses¹⁴

Statement	Strongly Agree	Agree	Neutral	Disagree	Strongly Disagree	Don't know
I have enough time to prepare breakfast at home	22	18	48	38	173	1
There is not enough time to eat breakfast at home	22	18	51	46	163	0
My child is not hungry in the morning.	24	20	45	43	168	0
There isn't any food for breakfast at my house.	9	7	4	9	271	0
My child thinks eating breakfast might make them fat	7	3	10	16	261	3
My child doesn't like to eat in front of other people	9	7	6	12	265	1
My child doesn't think it's cool to eat breakfast at school.	23	11	22	17	180	47
My child would rather do something else, such as sleep in or hang out with their friends etc., than eat breakfast.	26	30	32	48	160	4

¹⁴ Table 4.14 shows the responses to statements that had been identified as potential barriers to breakfast consumption.

Table 4.15: Not Enough Time to Eat Breakfast¹⁵

Response	Racial Group			
	White	African-American	Hispanic	Other
Strongly Disagree	136 58%	8 33%	9 35%	5 56%
Disagree	42 18%	1 4%	0 0%	3 33%
Neutral	35 15%	7 29%	9 35%	0 0%
Agree	8 3%	5 19%	5 19%	0 0%
Strongly Agree	14 6%	3 12%	3 12%	1 11%
Don't Know	0 0%	0 0%	0 0%	0 0%
Chi-Square	43.29			
p-value	0.001			

Table 4.16: Child Thinks Eating Breakfast Might Make Them Fat¹⁶

Response	Level of Child in School			Racial Group			
	PreK-6 th	7 th -8 th	9 th -12 th	White	African American	Hispanic	Other
Strongly Disagree	138 96%	28 88%	95 77%	211 90%	19 79%	18 69%	7 78%
Disagree	3 2%	1 3%	12 10%	13 6%	0 0%	2 8%	1 11%
Neutral	0 0%	1 3%	9 7%	8 3%	1 4%	1 4%	0 0%
Agree	0 0%	1 3%	2 2%	1 0%	0 0%	2 8%	0 0%
Strongly Agree	2 1%	0 0%	5 4%	0 0%	3 13%	3 12%	1 11%
Don't Know	1 1%	1 3%	1 1%	2 1%	1 4%	0 0%	0 0%
Chi-Square	28.70			47.06			
p-value	0.001			0.001			

¹⁵ Table 4.15 shows the statistically significant responses to the statement, “There is not enough time to eat breakfast at home.”

¹⁶ Table 4.16 shows the statistically significant responses to the statement, “My child thinks eating breakfast might make them fat.”

Table 4.17: Child Doesn't Like to Eat In Front of Others¹⁷

Response	Racial Group			
	White	African-American	Hispanic	Other
Strongly Disagree	212 90%	22 92%	17 65%	8 89%
Disagree	10 4%	0 0%	2 8%	0 0%
Neutral	5 2%	0 0%	1 4%	0 0%
Agree	6 3%	1 4%	0 0%	0 0%
Strongly Agree	2 1%	1 4%	5 19%	1 11%
Don't Know	0 0%	0 0%	1 4%	0 0%
Chi-Square	44.42			
p-value	0.001			

Table 4.18: Child Doesn't Think It's Cool To Eat At School¹⁸

Response	Level of Child in School		
	PreK-6 th	7 th -8 th	9 th -12 th
Strongly Disagree	101 70%	17 53%	62 50%
Disagree	6 4%	3 9%	8 6%
Neutral	8 6%	1 3%	13 10%
Agree	1 1%	4 13%	6 5%
Strongly Agree	4 3%	3 9%	16 13%
Don't Know	24 17%	4 13%	19 15%
Chi-Square	29.44		
p-value	0.001		

¹⁷ Table 4.17 shows the statistically significant responses to the statement, "My child doesn't like to eat in front of other people."

¹⁸ Table 4.18 shows the statistically significant responses to the statement, "My child doesn't think it's cool to eat breakfast at school."

Table 4.19: Child Would Rather Be Doing Something Else¹⁹

Response	Level of Child in School			Racial Group			
	PreK-6 th	7 th -8 th	9 th -12 th	White	African American	Hispanic	Other
Strongly Disagree	88 61%	16 50%	56 45%	122 52%	17 71%	12 46%	6 67%
Disagree	26 18%	6 19%	16 13%	42 18%	1 4%	4 15%	0 0%
Neutral	16 11%	2 6%	14 11%	27 11%	3 13%	1 4%	1 11%
Agree	6 4%	1 3%	23 19%	22 9%	1 4%	4 15%	2 22%
Strongly Agree	7 5%	6 19%	13 10%	22 9%	0 0%	3 12%	0 0%
Don't Know	1 1%	1 3%	2 2%	0 0%	2 8%	2 8%	0 0%
Chi-Square	28.58			33.30			
p-value	0.001			0.004			

¹⁹ Table 4.19 shows the statistically significant responses to the statement, “My child would rather do something else, such as sleep in or hang out with their friends etc., than eat breakfast”

Chapter 5: DISCUSSION AND CONCLUSIONS

The purpose of this study was to identify youth attitudes, frequency, and barriers for breakfast consumption and the use of available nutrition programs by youth living in poverty with food-insecurity. The surveyors were unable to reach their goal of 300 participants from the desired population in a timely manner. To reach their goal of 300 participants a random sample from throughout the counties was obtained to fill out the data. Of those who participated in the survey only 53 (17.67%) would have been considered food insecure, and 85 (31.84%) out of 267 that responded had a combined household income of \$50,000 or less. The study failed to meet its desired objectives with a focus on food insecure youth, but was able to determine attitudes of this particular community, frequency of breakfast consumption, and to identify barriers for youth breakfast consumption.

The first hypothesis was that there would be a significant number of youth who do not consume breakfast the majority of days in the week, and those who are eligible to participate in free breakfast are not participating in the program. From the survey responses 117 agreed or strongly agreed that they expected their child(ren) to be provided breakfast at school, and 185 agreed or strongly agreed that they did not let their child leave the house without eating breakfast. There is some overlap in responses, and they weren't statistically significant, but it shows that there was an expectation of all participants that their child should receive breakfast either at home or at school. Additionally parents attempted to get their child(ren) to eat either at home or at school, with 246 saying at home and 71 saying at school, again with overlap and lacking

statistical significance. The second part of the first hypothesis that children who were eligible to participate in free and reduced breakfast are not participating seems to be false as well. Out of the 300 respondents 63 participated in the program, which may have covered the 53 participants who had experienced food insecurity. Additionally, as part of eligibility for participation in this program, the families would have had to meet certain financial requirements. From the 2010-2011 Food Research and Action Center School Breakfast Scorecard the requirements are as follows;

“Free: Children from families with incomes at or below 130 percent of the federal poverty level eat at no cost. Also, children who live in SNAP households or participate in TANF or FDPIR are entitled to eat at no cost. Reduced-Price: Children from families with incomes between 130 and 185 percent of the federal poverty level can be charged no more than 30 cents per breakfast,” (Cooper & Levin, 2012).

Which, based on the data, these families probably meet the above criteria. There was statistical significance that the more school aged children in a household the increased likelihood of participation in the food assistance programs.

The second objective to determine the frequency of breakfast consumption in food insecure youth was not possible based on the data collected. The data does show that most of the respondent’s child(ren) ate breakfast almost every day and that 93% ate breakfast at least 3 times per week. Only six-percent ate breakfast two or less times per week during the school year. Even if all of those who ate breakfast two or less times per week were those who were food insecure that would still leave 35 out of 53 children who

ate breakfast at least 3 times per week during the school year. Additionally, among those who did not eat breakfast almost every day, the majority (80%) had breakfast available to them. Interestingly, during the summer months there is not much of a drop off, as would be expected. With the loss of availability of school based food programs a decrease in breakfast consumption would logically follow, but the data does not support this notion. Again the data shows that those who did not eat breakfast during the summer months had it available to them almost every day.

The third and final objective was to identify potential barriers to eating breakfast. Parental attitudes about breakfast consumption could be a potential barrier, but the data shows that most parents feel breakfast consumption is important and that breakfast is the most important meal of the day. Only a small percentage of parents did not feel that way, and the attitude of the few parents who do not feel that breakfast is important may be a barrier for their children. The data collected in this survey could neither confirm nor deny this, but it is a possibility.

After parental attitude barriers were identified more breakfast specific barriers became the focus of the statements. The first potential barrier identified was having enough time to prepare breakfast at home. The responses showed that about two thirds of respondents felt that they did not have enough time to prepare breakfast at home. Lack of time could potentially decrease both the availability and nutritional quality of breakfast. Although the data shows that the lack of time does not necessarily mean that breakfast was not provided or consumed. Of all the potential barriers asked about: not enough time to prepare breakfast, not enough time to eat at home, child not hungry in the morning,

child thinks eating breakfast will make them fat, child does not like to eat in front of other people, child does not think it is cool to eat breakfast at school, and child would rather be doing something else, not a single one had less than two thirds disagree or strongly disagree.

Overall the study did not meet the objectives that it set out to answer due to inadequate participation of the target audience, which is addressed in Chapter 7.

Although the objectives were not met the data showed that those who were in need of assistance at breakfast were more likely than not receiving the help they need by using available programs. Additionally the data showed that this particular community knows and understands the importance of breakfast to children, and that breakfast consumption during summer months does not drop off when compared to breakfast consumption during the school year. The data from this study could be used to show the importance of programs such as Free/Reduced Breakfast to help those who are in the most need. Finally, since most parents from this survey felt that they did not have enough time to prepare breakfast at home it may be worth looking into expanding the breakfast program to encourage more participation in school breakfast for all children.

Chapter 6: LIMITATIONS

The first limitation of this study was inadequate participation by the target audience. This was most likely due to several factors, the first being that respondents may have been tentative about answering questions about their use of assistance programs. If the desired population was tentative about participating the amount of time

and resources available to collect data would also factor in as a limitation. This would also account for the sample size being only 300. By choosing a smaller sample size it would allow for a baseline sample, and if the first set of data showed that there was no need for further investigation the study could be cut short to conserve resources for future needs. .

Another limitation was that the study was part of a group collaboration. This allowed different people and groups to pool their resources, but it can also reduce the depth of the questions desired. Additionally it may reduce the ability to delve deeper into some questions if desired.

A potential limitation for responses is embarrassment to respond truthfully. Even though the surveyors and responders did not know each other some people may be embarrassed about participation in assistance programs and deny their use. Additionally some responders may have changed their answers or adjusted their answers to “please” the surveyors. That is, they may have shaded their responses to meet some unknown desired outcome.

Chapter 7: FUTURE RESEARCH

Based on the results of this survey, future surveys into food insecure and impoverished populations may produce a higher participation rate if they had some sort of incentive attached. Also future studies dividing the children into sixth grade and younger and seventh grade and older may provide more accurate information on these two group’s attitudes towards breakfast and allow for targeted strategies to be developed.

Future studies could also look into what parents want their children to eat for breakfast and based on that data strategies could be developed for the creation of a school breakfast program. In addition to what the parents want their children to have for breakfast the children could also be surveyed in order to find a middle ground allowing for increased participation in the programs already in place and for future programs to be developed.

The survey that was developed could be modified and presented to students in a school setting. This could also allow for one-on-one surveys to be completed with the actual target audience and allow for immediate follow up questions to be presented. This would also be more labor intensive and require coordination and cooperation with schools.

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Appendix A

[Elijah Dacys Thesis IRB Approval Letter.jpg](#) (JPG) (317 KB)

Appendix B

[Survey Tool From Breakfast Consumption Study.doc](#) (Word 97-2003 .doc) (74 KB)

