CALIFORNIA STATE UNIVERSITY, NORTHRIDGE

A TASTE OF GOOD HEALTH: SCHOOL-BASED PARENT AND FAMILY
HEALTHY LIFESTYLES CLASSES TO REDUCE CHILDHOOD OBESITY

A Dissertation submitted in partial fulfillment of the requirements
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by

Annette Besnilian

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The Dissertation of Annette Besnilian is approved:

Bonnie Bailer, J.D.

Date

Scott W. Plunkett, Ph.D.

Date

Peggy Johnson, Ed.D., Chair

Date

California State University, Northridge

Dedication

To my loving, supportive, one of a kind, patient, wonderful husband and super dad,

George, for his continuous assistance, support and love

throughout this entire process and journey.

To my amazing children, Melanie, Emilie, Georgia, and Anthony, for your understanding, patience, and love. Your beautiful smiling faces and your angelic voices make each day so special. “My angels, always follow your dreams and achieve your goals with passion, love, and dedication.”

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To all my wonderful family.

In loving memory of Grandma Metzik Hasmig, Tanteek Ano,
Aunt Mary and Aunt Anoush.

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ABSTRACT

A TASTE OF GOOD HEALTH: SCHOOL-BASED PARENT AND FAMILY HEALTHY LIFESTYLES CLASSES TO REDUCE CHILDHOOD OBESITY

by

Annette Besnilian

Doctor of Education Degree

in Educational Leadership

The purpose of this study was to evaluate the effectiveness of “A Taste of Good Health,” a school-based parent education program designed to affect healthful behavior in parent participants and their families in a large urban school district. Participant nutrition, physical activity, cooking knowledge, and Body Mass Index (BMI) were measured before, during, and three months after the parent education intervention.

To address the research questions, this dissertation employed mixed-methods and pre-experimental survey design in evaluating the effectiveness of the parent workshops. The planned intervention consisted of a 4-week program, meeting once a week for 2½ hours at each meeting, for a total of 10 hours of instruction. In order to measure the effectiveness of the intervention in changing participants’ knowledge and behavior, quantitative data were collected through survey administration. There were a total of 202 participants who consented to participate in the research study. To augment the quantitative data, qualitative data were collected from participants in the program during

debriefing sessions at week 4 and at the follow up sessions in week 12. In addition, during the follow up sessions in week 12, one-on-one questioning was completed with each participant.

Results suggest that participants used the knowledge gained in the classes to create healthier home environments for their children and families. Using both quantitative and qualitative measures, major findings indicated participants in all five schools reported: (1) significantly increasing their nutrition, cooking, and physical activity knowledge from pretest to posttest and follow-up; (2) significantly decreasing their body weight and BMI from pretest to posttest; and (3) making significant changes in cooking, eating, and physical activity behaviors.

CHAPTER 1

STATEMENT OF THE PROBLEM

The dramatic increase in the prevalence of childhood obesity, now being described as a pandemic, as well as the serious consequences of childhood obesity including the health and financial burdens that transpire as a result, have prompted the need for broad interventions in order to address this public health issue (American Academy of Pediatrics, 2003; Cole, Waldrop, D'Auria, & Garner, 2006; Foster et al., 2007). To further compound this issue, evidence indicates childhood obesity and unhealthy diets may also lead to poor academic performance in school (Florence, Asbridge, & Veugelers, 2008; Hunt, 2008).

One of the greatest concerns surrounding the obesity epidemic is also the racial/ethnic disparities that exist in the prevalence of obesity throughout the United States (Whitaker & Orzol, 2006). Based on the National Health and Nutrition Surveys, the prevalence of overweight conditions among preschool children has almost doubled in the last three decades (Deckelbaum & Williams, 2001), and is highest in Latinos (Deckelbaum & Williams, 2001; Ogden & Carroll, 2010), nearly 50% higher than other ethnicities in the United States (Whitaker & Orzol, 2006). Latino children are the largest minority group in the U.S. educational system (U.S. Department of Education, 2011), and they compose half of the school population in California (Madsen, Weedn, & Crawford, 2010) where this study took place.

Given the dramatic concerns about childhood obesity, it is imperative to provide interventions early on so that children develop and adopt healthy eating and fitness habits

that they can carry into adulthood. Public schools can be ideal settings for intervention programs given that they typically serve 1 to 2 meals a day, can provide physical activity in a safe environment, and have educators who can be trained in the curriculum (Cole et al., 2006). In addition, effective interventions for weight loss in obese children have been shown to be successful when parents and adult caregivers are motivated and understand their role in establishing healthy eating habits among their children (American Academic of Pediatrics, 2003; Golan & Crow, 2004; Must et al., 1992). In response, the development of partnerships between schools and community agencies to provide family-based interventions has been suggested (Cole et al., 2006; Evans et al., 2011; Foster et al., 2008). However, there have been limited systematic follow-up evaluations of the effectiveness of such programs in changing families' nutrition and fitness habits after the completion of programs (Gonzalez-Suarez, Worley, Grimmer-Somers, & Dones, 2009; Story, 1999). Using quantitative and qualitative methods, this study examined the effectiveness of a school/community based partnership intervention program located in a culturally diverse region in California where Latino families compose the majority of the community and school district population (Madsen et al., 2010). The intervention was designed to increase families' nutrition knowledge and modify nutrition and physical activity behaviors. Specifically, this study evaluated participants' perceptions of the intervention program and evaluated whether participants and their families made changes to their eating behaviors, nutrition, cooking, and physical activity during the intervention and three months after the completion of the program.

Problem Statement

Childhood obesity is reaching pandemic proportions particularly for Latino

families (Carmona, 2003; Deckelbaum & Williams, 2001; Ogden & Carroll, 2010) resulting in significant health issues for children such as diabetes, heart disease, apnea, asthma, etc. (American Diabetes Association [ADA], 2010; Centers for Disease Control [CDC], 2009), as well as poor school performance (Ball, Crawford, & Kenardy, 2004; Datar & Sturm, 2006; Datar et al., 2004; Hunt, 2008; Schwartz & Puhl, 2003).

According to the CDC (2009), childhood overweight is defined as a Body Mass Index (BMI) at 85th to 95th percentile of the growth chart, while childhood obesity is defined as a BMI over the 95th percentile. BMI is a key index for relating a person's body weight to their height. The BMI is a person's weight in kilograms divided by their height in meters squared. BMI has become the standard medical measure used for determining overweight and obesity. Using BMI as the medical measure, data from the CDC indicated that 15% of children between ages 6 and 19 are overweight and that one in five children is overweight or obese.

There have been several interventions developed to combat childhood obesity. Some are school-based interventions that could be defined as interventions designed for children in the school setting (Lane, 2001), and some are school-based parent interventions. School-based parent interventions may be defined as partnering with schools to implement interventions that focus on educating the parents regarding healthy lifestyles (Reschly, n.d.).

Story (1999) reviewed the research on the evaluation of school-based obesity intervention programs for twelve controlled experimental studies, which were published between 1965 and 1996. He found that only two of the twelve studies had conducted follow-up research to determine the effectiveness of the program. In his review of these

studies, Story found the key interventions for preventing and treating obesity were increasing physical activity and increasing the consumption of healthier foods. However, he found very little research regarding the actual effectiveness of intervention programs in changing eating habits, physical activity, and cooking had been conducted. The interventions in schools that he reviewed were not school-based parent interventions.

More recently, Gonzalez-Suarez et al. (2009) conducted a meta-analysis of school-based obesity intervention programs published between 1995 and 2007. The meta-analysis showed there was convincing evidence that school-based interventions were effective, at least short-term, in reducing the prevalence of childhood obesity. However, based on their meta-analysis they suggested the need for follow-ups, after the completion of the intervention, to determine the long-term effectiveness of the programs. Similar to Story (1999), no school-based parent interventions were noted.

Research by Cole et al. (2006) found that programs consisting of a curriculum incorporating lifestyle habits, nutrition education, and physical activity may encourage positive behavioral changes in children. They suggested however, that these child-based interventions must consider the child's social context, which includes the school, community, and home environment. In addition, Cole et al. noted the importance of family involvement. Other researchers would agree, noting that parents are the decision makers and empirical base of the family (Golan & Crow, 2004). Epstein (2009) has suggested parent involvement is a key factor to the success of any program in schools.

Interventions that are child and family centered have been tried and found to be influential in combatting the problem (Cooke et al., 2003; Skidmore & Yarnell, 2004). Efforts to intervene at school level have been suggested, and results indicated that school-

based parent education programs are successful and can be effective in childhood obesity prevention (Cole et al., 2006; Evans et al., 2011; Foster et al., 2007; Li & Hooker, 2010). However, systematic evaluation and long term follow-up of school-based parent education interventions have not been conducted.

This dissertation study took place in a culturally-diverse region in Southern California, in which Latino families compose the majority of the population (Valley Care Community Consortium [VCCC], 2010), and obesity and diabetes are major health concerns. The intervention program at The Center for Healthier Communities (CHC) at Northridge Hospital Medical Center (NHMC) focused on reducing childhood obesity and diabetes through their School-based Obesity and Diabetes Initiative (SODI). The parent education component called “A Taste of Good Health” focused on increasing awareness and providing guidelines on healthy nutrition choices, food label reading, recipe modification, smart shopping, and related nutritional and healthy lifestyle information.

The SODI program of NHMC has collaborated with California State University, Northridge (CSUN), Northeast Valley Health Corporation (NEVHC), Women, Infants Children Program, and Los Angeles Unified School District (LAUSD) to conduct nutrition education and cooking classes in a number of Los Angeles Unified School District (LAUSD) elementary schools for four years. The goal is to increase nutrition knowledge, modify nutrition and physical activity behaviors, and ultimately counter childhood obesity and diabetes in the San Fernando Valley of Los Angeles, CA.

The program evaluated in the present study consisted of a 4-week series of classes, meeting one time a week for two and a half hours. The curriculum consisted of a 30-minute lecture, a 30-minute session of physical activity, 30 minutes of hands-on

learning activities, and 30 to 60 minutes of cooking and taste testing. Some of the topics covered were label reading, physical activity, eating healthy meals, shopping and dining out tips, the importance of breakfast, easy cooking techniques, and recipe modifications.

Similar to other intervention programs, systematic evaluation of this program had not been conducted. Although the “A Taste of Good Health: School-based Parent and Family Healthy Lifestyles Classes” program had been successful based on verbal feedback from previous participants and a few posttests, a systematic empirical evaluation had not been conducted to determine if families made changes in their eating behaviors, nutrition, cooking, and physical activity during the classes and again 12 weeks after completing the school-based parent education classes.

Purpose and Significance

The purpose of this study was to evaluate whether the “A Taste of Good Health” program affected healthful behavior in parent participants and their families in a large urban school district. Participant nutrition, physical activity, cooking knowledge, and BMI were measured before, during, and three months after the parent education intervention. Given the pandemic proportions of childhood obesity (American Academy of Pediatrics, 2003; Cole et al., 2006; Foster et al., 2007), and the research calling for the evaluation of school/community partnerships that are focused on family-based interventions, there was a critical need to evaluate this program that can be used in other schools and districts implementing school/community partnership interventions with a focus on parent education.

This study is significant as it will add to the current body of literature on the effectiveness of school-based parent interventions for obesity prevention. Furthermore, it

aimed to inform stakeholders of the importance of conducting a systematic evaluation and follow-up to determine the effectiveness of these interventions.

Research Questions and Hypothesis

In order to evaluate how “A Taste of Good Health” classes affect healthful behavior in parent participants and their families, it was hypothesized that providing an intervention which focused on educating parents on nutrition, physical activity, and cooking would result in their adopting a more healthy lifestyle. The following research questions guided this study:

1. Are there significant differences between pretest, posttest, and follow-up on participants’ knowledge regarding nutrition, cooking, and physical activity?
2. Are there significant differences between pretest, posttest, and follow-up on body weight, body mass index (BMI), and percent body fat of the participants?
3. Are there significant differences between pretest, posttest, and follow-up on cooking, eating habits, and physical activity of the participants and their families?
4. What comments, observations, and suggestions do participants of the program have to guide any changes to the program?

Conceptual Framework

The conceptual framework that guided this study incorporated components of Epstein’s School, Family, and Community Partnership Model (Epstein, 2011), and Golan and Weizman’s (2001) conceptual model of the familial approach to the treatment of childhood obesity.

Epstein (2009) proposed that successful parent education programs require the involvement and partnership between the family, community, and school. Epstein further

noted that programs that have included this partnership have been able to produce successful results. Epstein (2011) developed a framework for defining six different types of parent involvement. The six types of parent involvement are parenting, communicating, volunteering, learning at home, decision-making, and collaborating with the community. This framework assists educators in developing school and family partnership programs. According to Epstein (2011), there are many reasons for developing these partnerships. The main purpose for creating partnerships is to help children be successful in school and throughout life (Epstein, 2011). She stresses the importance of such programs in an effort to help youth deal with issues both present-day and in the future (Epstein, 2009). According to Epstein (2011), these partnerships have shown an increase in both student achievement and resources from schools' community partners, such as physical activity equipment or nutrition experts to conduct workshops. The framework demonstrates why it is important to involve the community, the parents, and schools. It was hypothesized that the partnership developed with participants through the school-based parent nutrition education program in the present study allowed the parents to be involved and take a leadership role in successfully implementing a healthier lifestyle for themselves and their families

Similarly, Golan and Weizman (2001) emphasized the importance of parental involvement. They described a conceptual model for a family-based approach to the treatment of obesity in young children. They stressed the integration of behavioral, social learning, and family system approaches. They placed emphasis on the approach of a healthy lifestyle, and the parents' role and responsibility in the control of healthy behavior in children. Golan and Weizman viewed the familial approach to the treatment of

childhood obesity as consisting of changes in parental cognition, behavior, and environment as they relate to a healthy lifestyle. Parents' cognitive and behavioral changes (e.g., increased nutrition and health skills and increased parenting skills) can cause parents to become role models for a healthy lifestyle and thus make changes in the home environment to incorporate healthy nutrition and fitness habits.

The school-based parent education program in this study derived from Golan and Weizman's (2001) conceptual model for a family-based approach in the treatment of obesity in young children. By using the integration of behavioral, social learning, and family system approaches, Golan and Weizman emphasized healthy lifestyle and parent responsibility in the control of healthy behaviors in children. They stressed the importance of parental involvement and its benefits in treating childhood obesity. In the long term, they have stressed the importance of a health-centered approach versus a weight-centered approach. A long-term healthy approach was the overall goal. Their approach looked at both the big picture and long-term picture in addressing childhood obesity. They have posited that simply focusing interventions on reducing weight in the present without making any behavior changes will not be effective, thus stressing the importance of the health-centered approach. They have posited that rather than focusing only on weight reduction, parents need to work diligently to increase their knowledge and reduce childhood obesity as they play an integral role in shaping family practices and behavior as they relate to leading a healthy lifestyle. Using their conceptual model as a framework, it was hypothesized that helping parents change their own behavior, and becoming role models, would lead to increasing parents' ability to change their family environment and behavior regarding nutrition and fitness.

A logic model (“A Taste of Good Health” Logic Model) is a way to visually represent the various components of the present project organized around the ideas presented in the conceptual framework outlined above. McLaughlin and Jordan (1999) developed a Logic Model process that has been used by evaluators and program managers for over 20 years to provide logical descriptions and linkages, which they term program inputs and outputs. They define inputs as the program’s financial or human resources and partnerships. The program activities are the different steps needed to produce the outputs of the program, such as developing curriculums. The program outputs are the direct services or products developed or provided to the participants.

According to McLaughlin and Jordan (1999), by using this model, the performance measurements, defined as long-term, intermediate-term, and short-term outcomes, which are critical to the program, can be identified and measured. Using concepts from Golan and Weizman (2001) and Epstein (2011), this study employed a logic model entitled “A Taste of Good Health” Logic Model as a method for evaluating the parent education intervention. In this study, the inputs incorporated the family, community, and school as described by Epstein (2011). The outputs were conducting the actual parent workshops and using parents as agents of change as recommended by Golan and Weizman (2001). The short-term outcomes were to increase participant knowledge regarding healthy lifestyles and the importance of maintaining a healthy weight. The intermediate-term outcomes were to make nutrition, physical activity, and cooking behavior changes in participants. The long-term outcomes were to incorporate these programs in schools and therefore reduce the rates of obesity. It was the goal of this dissertation to evaluate and accomplish the short- and intermediate-term outcomes so that

they will be used in an effort to accomplish the long-term outcomes in the future. Figure 1.1 presents the steps in the project's logic model.

Figure 1.1. “A Taste of Good Health” Logic Model

Overview of Methodology

To address the research questions, this study employed mixed-methods (Hanson, Creswell, Clark, Petska, & Creswell, 2005) and pre-experimental survey design (i.e., pretest, posttest follow-up design without a comparison/control group) in evaluating the effectiveness of the parent workshops before, during, and after the intervention. As noted earlier, the planned intervention consisted of a 4-week program, meeting once a week for two and a half hours at each meeting, for a total of ten hours of instruction. The program was implemented in five schools in one local district in LAUSD. There were a total of 202 Latino participants who consented to participate in the research study. There were 19 participants in school one, 38 participants in school two, 62 participants in school three, 51 participants in school four, and 35 participants in school five who completed the pretest. Of the 202 participants, approximately 149 completed the posttest and 108 participants completed the follow-up surveys. In order to measure the effectiveness of

the intervention in changing participants' knowledge and behavior, quantitative data were collected through surveys administered before, during, and three months after the completion of the intervention. The survey measured knowledge of healthy eating, physical activity, and cooking of the parents. To measure participant behavior changes in healthy eating, physical activity, and cooking, participants completed a behavior frequency questionnaire as a part of the survey. In order to determine whether the intervention influenced participant body weight, body mass, and percent body fat, their body weight and percent body fat was measured at week 0 (baseline), week 4 (posttest), and at week 12 (follow-up). According to Creswell (2008) quantitative research provides an explanation for the relationship among variables and can describe specific, measurable, and quantifiable trends and data. Thus, these methods were appropriate to address the research questions because they provided a narrow and specific measure of the variables indicated above.

To augment the quantitative data, qualitative data were collected from participants in the program during debriefing sessions at week 4 and at the follow up sessions in week 12. In addition, during the follow up sessions in week 12, one-on-one questioning was completed with each participant while they were being weighed. The following questions were asked during the week 4 large group debriefing session at each site to determine what changes were recommended for the overall improvement of the program and workshops.

1. How can this program be changed or improved to be more helpful to you?
2. Which parts of the program were most useful?
3. Which parts of the program were least useful?

The questions asked during the debriefing sessions with all participants at the week 12 follow-up were:

1. What are some changes that you and your family have made to your cooking techniques because of the program?
2. What are some changes that you and your family have made to your eating and nutrition behaviors because of the program?
3. What are some changes that you and your family have made to your physical activity behaviors because of the program?

During the week 12 follow-up session, each participant was individually asked to explain from their perspective how the program had benefited their children and family.

According to Bogdan and Biklen (2007), these methods were appropriate to the research questions because they allowed the researcher to examine more in-depth what participants perceived to be changes in their cooking, physical activity, and eating behavior as well as their perceptions of strengths and weaknesses of the program.

Delimitations and Limitations

According to Bryant (2004), delimitations are factors that the researcher uses to constrain the boundaries and narrow the scope of the study. The results may not be applied for all persons, places, or at all times. The delimitations of the study were as follows:

1. This study was being conducted in five schools in one local district in LAUSD, thus findings may not be generalizable to other schools or districts.

2. Participants were parents who volunteered to participate in the classes in five schools in one district. As a result, the data obtained may not be generalized or relevant to all populations.
3. All of the participants' first language was Spanish. The intervention classes were taught by a bilingual dietitian. The participants completed surveys in their preferred language, and debriefings and one-on-one questions were conducted in participants' preferred language. However, language barriers may have resulted in accuracy problems as the participants may not have understood the questions or may have misinterpreted the meaning of some questions.
4. The delimited conclusion arises because of the limited numbers. If more parents and schools from different districts were used, the findings may differ. For example, other districts may have different demographics and social/financial parents' statuses. Parents may also have predetermined and preconceived nutrition knowledge.

Limitations are inherent in qualitative and quantitative methodologies and will limit the study (Bryant, 2004). The limitations of the study were as follows:

1. The parents participating were volunteers and were not randomly selected.
2. The limitations for the quantitative methods of the study were small group sizes as it pertains to parents, and it may not be representative of the general population.
3. With the exception of the BMI measurements and researcher observations, qualitative and quantitative data were primarily based on participants' self-report. Thus, participants may not have reported information accurately.

4. The self-report survey was designed for the evaluation study, thus it was not a validated scale. However, the face validity of the scale was determined to be consistent with the curriculum taught in the program.
5. The survey may not have covered all the areas taught in the program due to time limitations. Thus, some areas of the program may not have been tested.

Organization of the Dissertation

Chapter 1 presented the issue of childhood obesity, which is reaching pandemic levels. The problem, purpose, significance, research questions, and conceptual framework were described. The chapter concluded with an overview of the methodology and the delimits and limits of the study. Chapter 2 reviews current and relevant literature concerning childhood obesity as a pandemic and the effects on children's health and success in school. Research regarding school-based childhood obesity intervention models and school-based parent interventions will be presented with a focus on parents as agents of change. Chapter 3 articulates the methods used to address the research questions. Chapter 4 presents both quantitative and qualitative results of the study. Chapter 5 discusses the findings in relation to the literature, implications for policy and practice, and recommendations for future research.

CHAPTER 2

REVIEW OF THE LITERATURE

Childhood obesity is reaching pandemic proportions, particularly for Latino families (Carmona, 2003; Deckelbaum & Williams, 2001; Ogden & Carroll, 2010). Research tells us that childhood obesity results in significant health issues for children such as diabetes, heart disease, apnea, and asthma, (ADA, 2010; CDC, 2009), as well as poor school performance (Ball et al., 2004; Datar & Sturm, 2006; Datar et al., 2004; Hunt, 2008; Schwartz & Puh, 2003). In response, schools and agencies across the country have implemented a variety of interventions designed to curb this pandemic. There are relatively few studies, however, that engage in the systematic evaluation of these interventions, particularly studies that examine the long-term effects (Cole et al., 2006; Evans et al., 2011; Foster et al., 2008; Li & Hooker, 2010; Story, 1999).

The purpose of this study was to evaluate whether the “A Taste of Good Health: School-Based Parent Education Workshops” program classes affected healthful behavior in parent participants and their families in selected schools in LAUSD not only upon immediate completion of the series but also 12 weeks post program start. A formal program evaluation and follow-up has not been conducted on this school-based parent education program to examine the relationship between the workshop series and the participants’ eating behavior, physical activity, and cooking patterns after the completion of the program. The primary research questions that guided this study were: (1) Are there significant differences at pretest, posttest, and follow-up on participants’ knowledge regarding nutrition, cooking, and physical activity? (2) Are there significant differences

at pretest, posttest, and follow-up on body weight, body mass index (BMI), and percent body fat of the participants? (3) Are there significant differences at pretest, posttest, and follow-up on cooking, eating habits, and physical activity of the participants and their families? and (4) What comments, observations, and suggestions do participants of the program have to guide any changes to the program?

In order to evaluate how “A Taste of Good Health” classes affect healthful behavior in parent participants and their families, it was hypothesized that providing an intervention which focused on educating parents on nutrition, physical activity, and cooking would result in the adoption of a more healthy lifestyle. To situate this study in what is already known about childhood obesity and intervention strategies, this chapter will review the relevant literature concerning childhood obesity as a pandemic and the effects on children’s health and success in school. Research regarding school-based childhood obesity intervention models and school-based parent education interventions will be presented next with a focus on promising practices. The role of parents as agents of change will then be discussed. The review will conclude with a summary of the research and how this study may contribute to the current knowledge base.

Obesity and Childhood Obesity as a Problem

This section reviews studies that have focused on and explored obesity, particularly childhood obesity, as a major problem facing our nation today. It first describes the data related to obesity, particularly in the Latino population. Next, literature regarding causes associated with childhood obesity are reviewed. The section concludes by describing what the literature has identified as potential consequences of childhood obesity.

Incidence and Prevalence

Childhood obesity has become a “national crisis” (Carmona, 2003). Based on the National Health and Nutrition Surveys, the prevalence of overweight conditions among preschool children has almost doubled in the last three decades (Deckelbaum & Williams, 2001). The prevalence can be witnessed in schools serving K-12 students. In a recent paper, the Association of Latino Administrators and Superintendents (ALAS) emphasized childhood obesity as a growing major national concern and a public health issue which is pressing and that which is having an effect on youth (ALAS, 2011). Data from the Centers for Disease Control (CDC) have indicated that 15% of children between ages 6 and 19 are overweight (CDC, 2009). One in five children are overweight or obese. Results from the 2007–2008 National Health and Nutrition Examination Survey (NHANES) indicated that an estimated 16.9% of children and adolescents aged 2-19 years were obese. Ogden and Carroll (2010) reported that between the years 1976 and 2008, the prevalence of obesity increased from 5.0% to 10.4% among preschool children, 6.5% to 19.6% among 6-11 year old children, and 5.0% to 18.1% among 12-19 year old adolescents.

The rates of overweight are even higher in Los Angeles County where the present study took place. Statewide physical fitness testing programs were conducted in the year 2001 with public school students in grades 5, 7, and 9. The President’s Council on Fitness, Sports and Nutrition (2001) indicated that 21% of the students were overweight, and an additional 19% were at risk for becoming overweight. Using the Physical Fitness Testing Program (CaPFTP) data, the Los Angeles County Department of Public Health (2005) showed that childhood obesity was on the rise. It was on the rise within all

groups, but more prevalent in certain places and populations. The study clearly showed higher obesity rates in lower socioeconomic groups.

However, there is some promising data arising from a more recent study completed by Frey (2012). Frey found that California's childhood obesity rates were slowing and not rising as rapidly as before. This was a cohort study, which examined 6.3 million student records provided by the California Department of Education for 5th, 7th, and 9th graders in each year between 2003 and 2008. The study found that obesity levels had stabilized and fitness levels had improved among 7th and 9th graders. The most important finding of this study was a significant increase in children's aerobic capacity. Dr. William Bommer, a cardiologist at UC Davis, credits these promising results to California's regulations in implementing a program to promote nutrition standards as well as fitness requirements in schools (Frey, 2012). However, critical to this study was Frey's finding that race and ethnicity played a major role in the fitness level of the students. Specifically, Latino students had a 40% higher chance of being physically unfit than the average student. These findings send a clear message that there is a need for a greater level of fitness in Latino students.

To summarize, studies indicated that childhood obesity continues to be a problem in the United States. Although there are some promising trends in the rise of obesity rates in children in California (Frey, 2012), obesity rates in the Latino population continue to be a problem. This is significant in that the present study took place in LAUSD where 73% of the student population is Latino (LAUSD, 2012). The following section examines literature on obesity specific to the Latino population.

Latino Population and Obesity

California has the fastest growing Latino population. One out of three Californians are Latinos, and approximately 47% of children attending public schools are Latinos (Latino Coalition for a Healthy California [LCHC], 2006). California male and female Latinos of all ages have among the highest rates of obesity and overweight in the nation. They suffer from the most severe consequences of obesity in Type 2 diabetes. Nearly 70% of California Latino adults are overweight or obese (California Department of Health Services, 2005). Among all California adolescents ages 12 to 17, Latino adolescents are the most likely to be overweight or at risk for overweight. The prevalence of overweight among Latino adolescents who are U.S.-born (20%) is nearly twice as high as among non-U.S.-born Latino adolescents. These statistics contribute to the extremely high prevalence of heart disease, cancer, stroke, and diabetes, all of which have obesity as a risk factor, and account for nearly 60% of all deaths among Latinos (Center for Health Statistics, 2003). The risk for diabetes is becoming so great that it is projected that half of Latino newborns will likely develop diabetes during their lifetime.

The prevalence of childhood obesity in preschool children is highest in Mexican-Americans (Deckelbaum & Williams, 2001; Ogden & Carroll, 2010), nearly 50% higher than other ethnicities in the United States (Whitaker & Orzol, 2006). Considering that Latino children compose half of the school population in California, their fast growing population with the highest susceptibility to obesity signifies the need for intensive efforts to combat this issue (Madsen et al., 2010). Clearly, research indicates there are high rates of obesity among Latinos. The following section discusses the causes of obesity.

Causes of Obesity

Obesity can be closely linked to the consumption of high-calorie, nutrient-poor foods such as high fat and high sugar snack foods, fast foods, soda, and other sweetened beverages (Woodward-Lopez, 2006). The consumption of fresh fruits and vegetables, whole grain products, and low-fat dairy and protein are associated with healthier weights (Woodward-Lopez, 2006). Many children in the United States are not consuming diets that correspond to dietary guidelines. Of significance to the present study, researchers have found that the diets of Latino children to be higher in dietary fat, sweetened beverages, and lower in fruits and vegetables, as compared to other groups (Neumark-Sztainer, 1996; Troiano, Briefel, Carroll, & Bialostosky, 2000).

Over 22% of Latino families in California are living at the poverty level (Bohn, 2011). Limited access to healthy foods in low socioeconomic status (SES) neighborhoods has been linked to high rates of childhood obesity (California Center for Public Health Association [CCPHA], 2008). Block, Scribner, and Desalvo (2004) suggested there are less grocery stores and more fast food restaurants in low SES areas compared to higher ones. Many low SES families cannot afford healthy foods, which tend to be more expensive than unhealthy foods. Hence, they are buying more fast food due to the prevalence of more fast-food outlets. In addition, fast food tends to be cheap and convenient (Drewnowski & Specter, 2004).

The lack of physical activity is also a contributing factor to obesity. The Center for Disease Control has recommended a minimum of 30 minutes of moderate physical activity for at least five days per week, or a minimum of 20 minutes of vigorous activity three days per week (CDC, 2006). In Los Angeles County, Latino adult males were

found to have the highest rate of being sedentary (46%) for any racial/ethnic group (Los Angeles County Health Survey, 2002-2003). Less than one in four Latino adults engaged in even 20 minutes of physical activity three times a week (California Behavioral Risk Factor Survey, 2001).

Only one in five Latino children and youth in grades five, seven, and nine met all six fitness standards in the 2010 statewide fitness test (California Department of Education, 2010). Ten percent of Latino adolescents were found to engage in little to no moderate or vigorous physical activity (Babey, Diamant, Brown, & Hastert, 2005). This data clearly suggests that low levels of physical activity are affecting the health status of Latino youth as well as putting them at risk for obesity. Lack of knowledge, understanding, and resources are contributing causes of obesity in this population (Alexander, Sherman, & Clark, 2007), and lead to medical, psychological, and school performance issues. Research regarding the consequences of obesity is presented in the following section.

Consequences of Obesity

A large amount of literature focuses on the direct and indirect consequences of obesity. Direct consequences can be categorized as medical (ALAS, 2011; CDC, 2009, Deckelbaum & Williams, 2001; LCHC, 2006) and psychological (Latner & Stunkard, 2003; Puhl & Latner, 2007; Schwartz & Puhl, 2003). Indirect consequences include the impacts on academic performance (Cottrel, Northrup, & Wittberg, 2009; Hunt, 2008).

Medical. Major health problems associated with obesity are Type 1 and Type 2 diabetes, cardiovascular and heart problems, cancer, asthma, sleep apnea, orthopedic issues, liver disease, anxiety, depression, and eating disorders (ALAS, 2011; CDC, 2009;

Deckelbaum & Williams, 2001; LCHC, 2006). Childhood obesity is also associated with a reduced quality of life and an increased risk for adult obesity (ALAS, 2011; CDC 2009). Childhood obesity comprises the same comorbidities and health disparities as in adults (Deckelbaum & Williams, 2001), such as coronary artery disease, hypertension, hypercholesterolemia, dislipidemia, stroke, and diabetes (CDC, 2009). Freedman, Dietz, Srinivasan, and Berenson (1999) conducted the Bogalusa Heart Study, which was comprised of children ages seven and eight years old. The study indicated a relationship between being overweight and having factors that will contribute to cardiovascular disease. The risk factors measured were blood pressure levels, insulin, and lipids. They concluded that obesity interventions are needed to help lower risks of cardiovascular disease in adults and children.

Type 2 diabetes, which is typically known as an adult disease, comprises 25% to 60% of new onsets of childhood diabetes, and it is increasing along with the rapid rise of childhood obesity (Must et al., 1992). According to White (2005), Type 2 diabetes as well as obesity rates among children are growing rapidly in the United States. Obesity and diabetes are clearly taking their toll on children. Recent data shows that some areas of the country had 30-40% of children with Type 2 diabetes (White, 2005).

In another study, Fogt, Leal-Vasquez, Sosa, Trevino, Woods, and Wyatt (2008) conducted research to determine the prevalence of obesity and its outcomes such as high blood glucose, low fitness, and insufficient energy among children from poor families. This study was conducted with a cross-sectional design. BMI, fasting blood glucose, body fat, step test, and three 24-hour dietary recalls were among the measured factors. The participants were fourth graders with ages between 8 and 10. The majority of the

children, approximately 80%, were from Mexican American heritage. The results of this study indicated that a great many children who were raised in low-income families had health and obesity problems. About a 30% rate of obesity was observed among these children. Problematic outcomes of obesity such as low energy and high glucose were seen among participants as well. Based on the results of the three-day food diary, it was apparent that most of the meals these children consumed consisted of energy dense and low nutrient dense foods. Researchers concluded that children who live in poverty are at higher risk of becoming obese and developing Type 2 diabetes. Early detection and intervention is needed to prevent future outcomes. Parental education, more physical activity, and the consumption of more nutrient foods were among the researchers' recommendations.

Research indicates that another consequence of childhood obesity is that it leads to adult obesity. Singh, Mulder, Twisk, van Mechelen, and Chinapaw (2008) systematically reviewed 25 studies, which tracked childhood obesity leading into obesity during adulthood. All 25 studies reported that childhood obesity can increase the risk of becoming overweight and/or obese adults. Given these findings, Singh et al. also recommended obesity interventions during childhood. In 2000, diabetes was recognized as the sixth leading cause of death in the United States (CDC, 2009). One risk factor for adult mortality and morbidity is childhood obesity, even if it is not present at the time of diagnosis. The risk of adult obesity is much greater for obese children versus non-obese, regardless of the duration of obesity. Obesity in teenagers is significantly related to the incidence of mortality, cardiovascular disease, colorectal cancer, gout, and arthritis in adulthood (Kleinman, 2004).

Another medical consequence of obesity is lack of physical fitness, which can lead to poor health. Mastrangelo, Chaloupka, and Rattigan (2008) conducted a fitness study to compare cardiovascular fitness between the children who were obese and those who were non-obese. Approximately 118 children between the ages of eight and eleven were asked to run or walk for one mile. The estimated oxygen peak during the walk was measured. The results clearly showed that children who were obese had poor cardiovascular fitness when compared to children who were not obese.

Psychological. Research suggests that childhood obesity causes stigmatization towards obese children (Bacardi-Gascon, Leon-Reyes, & Jimenez-Cruz, 2007; Puhl & Latner, 2007; Schwartz & Puhl, 2003). According to a study conducted by Puhl and Latner (2007), childhood obesity interventions are necessary because the consequences of obesity are potentially not only physical, but also social and psychological. Puhl and Latner noted, “as a result of weight bias and discrimination, obese children suffer psychological, social, and health-related consequences” (p. 557). In a prior study, Schwartz and Puhl (2003) examined several studies about the major challenges that obese children and their families have encountered. In particular, they examined the amount of stigmatization towards overweight children and the conflicting advice given to the parents about how to help their children. Results indicated that obese children were often the target of stigmatization from other children and even from adults (e.g., teachers). Schwartz and Puhl suggested that this stigmatization could lead to eating disorders, depression, low self-esteem, and many other issues later in life.

Bacardi-Gascon et al. (2007) studied the stigmatization of Hispanic overweight children. Approximately 433 fifth and sixth graders and 342 mothers were studied to

determine stigmatization among Mexican overweight children and non-overweight children by their own peers and mothers. They rated both genders based on physical characteristics. The results showed that both boys and girls, whether they were overweight or not overweight, preferred the obese friend the least. Similar to Schwartz and Puhl (2003), Bacardi-Gascon et al. argued that stigmatized children may be vulnerable to psychological effects (e.g., low self-esteem and depression) and social dysfunction (e.g., isolation).

School performance. According to Hunt (2008), childhood obesity may lead to poor academic performance. The Hunt Institute's review of research indicated that even though a clear link was absent, there was reason to believe that there was an indirect effect on academic performance. In addition, scholarly articles and studies have specifically examined low school performance in relation to childhood obesity and nutrition (Ball et al., 2004; Datar & Sturm, 2006; Datar et al., 2004; Hunt, 2008; Schwartz & Puhl, 2003).

As noted previously, the lack of physical activity has been found to be a contributor to childhood obesity. Cottrel et al. (2009) conducted a study to examine the possible relationship between children's fitness assessment and their performance in four academic areas. Children's aerobic capacity, abdominal and upper body strength, and flexibility were measured using FITNESSGRAM. Math, language arts, science, and social studies were tested using a statewide standardized academic performance test while keeping gender and socioeconomic differences in mind. The results of the study showed that the children who were in the healthy fitness zone (HFZ) performed significantly better on the standardized academic tests in comparison to the children who

were below the healthy zone. Specifically, children in the HFZ for aerobic capacity and abdominal strength performed significantly better in math, and the children who were in the HFZ for upper body strength performed better in both math and science. These findings provide support to the idea that children who are physically fit tend to also perform better academically.

In another study, Crosnoe and Muller (2004) proposed that obesity directly affects an individual's functioning in physical and non-physical ways, including lower educational attainment. The data were gathered using the National Study of Adolescent Health, which is an ongoing national representation of American adolescents in grades 7 to 12. Multiple factors were measured and studied such as BMI, race, age, gender, parental education, and athletic participation. Their conclusion was that obesity, like many other health measures, is a multifaceted contributor to academic performance. Therefore, obesity has psychological as well as physical complications. Similar to the findings of Cottrel et al. (2009), longitudinal results indicated a negative association between obesity and achievement in schools, especially in schools where students had higher physical activity. The psychological and physical complications were lower in schools with higher athletic participation.

Datar and Sturm (2006) examined the relationship between childhood overweight and elementary school outcomes. The results from the study concluded that girls moving from non-overweight to overweight between kindergarten entry and the end of third grade were significantly associated with the reduction in test scores, as well as behavioral and social problems. The results, however, did not show a significant effect on the boys.

In a prior study Datar, Sturm, and Magnabosco (2004) examined the association

between children's overweight status in kindergarten and their academic achievement in kindergarten and first grade. The data were collected from the Early Childhood Longitudinal Study-Kindergarten Class (ECLS-K). Detailed information about the children, their parents, teachers, and school characteristics were gathered at multiple times. Children's height and weight were measured at each data collection; socioeconomic status, parent-child interaction, birth weight, physical activity, and television watching were among the controlled factors. Results indicated about 10% of kindergarteners were overweight when entering kindergarten, with the prevalence of overweight being slightly higher in boys than girls. Overweight children were significantly more likely to be from Hispanic and poor families with less educated mothers. They generally had a higher birth weight and watched more hours of TV per day. Both overweight boys and girls scored significantly lower in both reading and math tests at the beginning of kindergarten. These differences appeared to be more significant when other factors such as socioeconomic and behavioral factors were considered. The major conclusion in the ECLS-K study was that being overweight could be a marker, but is an indirect factor for academic performance.

Using data from the National Longitudinal Study of Adolescent Health, Sabia (2007) conducted research to find the link between academic performance of young adults, mostly in high school, and their body weight status. There are several conclusions to be drawn from this study. Similar to Datar and Sturm (2006), there was vast evidence of a negative relationship between body weight and academic achievement among white female adults: the higher the weight of the participants, the lower the academic achievement. This negative relationship was much less apparent among male adults and

nonwhite female adults. These results led Sabia to conclude that body image could be a main factor for white female adults as it affects their academic achievement and self esteem.

To summarize, in reviewing the literature, obesity, particularly childhood obesity, is a major problem facing our nation today, particularly for the Latino population. The main causes of obesity are poor physical fitness, poor nutrition, and access to healthier foods. Lack of understanding and knowledge regarding how to lead a healthier lifestyle are other causes of this epidemic.

As reviewed in this section, there are medical, psychological, and academic consequences that are a direct or indirect result of childhood obesity. There are a myriad of interventions focused on preventing childhood obesity. The following section reviews research on the types of childhood obesity interventions and their effectiveness. For the purposes of the present study, which is focused on the effectiveness of a school-based parent education intervention, the primary focus of this portion of the literature review will be on childhood obesity interventions that involve schools as well as those that involve a partnership between schools and parents.

Obesity Interventions

In response to the problem of childhood obesity, schools and agencies across the country have implemented a number of interventions designed to curb this pandemic. Common to all of these interventions is a focus on education rather than on weight loss (Oude Luttikhuis et al., 2009; Savoye, Berry, Dziura, Shaw, Serrecchia, Barbetta, & Caprio, 2005). For example, Oude Luttikhuis et al. (2009) conducted a systematic review of 54 studies on programs dealing with interventions for treating obesity in children. The

interventions focused on diet, physical activity, and behavior changes. The results showed that lifestyle programs can reduce the level of overweight in children and adolescent obesity 6 and 12 months after the beginning of the program. This review confirmed that the short-term effectiveness of lifestyle treatments, and reinforced the point that information on the long-term (more than six months) outcome of obesity treatment in children and adolescents is limited.

Many studies have confirmed that it is more economical to prevent obesity than to treat it (California Department of Health Services, 2005). According to the Latino Coalition for a Healthy California (2006), “particularly important for Latinos are prevention strategies that strengthen families and communities and emphasize broad concepts of social and physical health rather than focusing on BMI” (p. 6). As noted previously, studies indicated that individuals do not always make healthy food choices (Neumark-Sztainer, 1996; Troiano et al., 2000; Woodward-Lopez, 2006). This is particularly true for families living in poverty where options for selecting healthy food alternatives may be limited (Woodward-Lopez, 2006). One method to impact lifestyle changes, particularly for children attending public schools, is through legislation. For example, Woodward-Lopez, Gosliner, Samuels, Craypo, Kao, and Crawford (2010) assessed the impact of legislation establishing nutrition standards for foods and beverages that compete with reimbursable school meals in California through pre and post testing at 99 schools. Results indicated that the availability of nutrition standard-compliant foods and beverages increased, and the availability of noncompliant items had decreased. Most importantly, the biggest reduction in consumption at school was sodas, sweetened beverages, regular chips, and candy. However, the consumption of these foods remained

unchanged at home. These results suggested there needs to be more of a linkage between the school and home environment

The two primary contacts for children are the home and school. Schools are an ideal environment to prevent childhood obesity and provide opportunities to change behavior as they can positively influence a child's health and healthy behavior (APA, 2003; Shaya, Flores, Gbarayor, & Wang, 2008; Story, 1999; Torre, Bucher, Aadre, & Joan-Carles, 2010). However, a framework developed by Woodward-Lopez at UC Berkeley, indicates that the aspects of the environment need to be engaged (LCHC, 2006). This would suggest that involving parents in obesity interventions is important. The following section of the literature review will focus on the research of two specific types of interventions, school-based obesity interventions and school-based parent education interventions.

School-Based Obesity Interventions

According Lane (2001), school-based interventions can be defined as interventions designed for children at the school setting. These interventions primarily involve the school environment, the teachers, and the school curriculum. Some curriculum may focus on health and nutrition education, some on physical fitness, and some may include a combination of both. There are many different school-based interventions that have been implemented successfully over the last few years in the Los Angeles Area (LCHC, 2006).

A meta-analysis of 11 school-based intervention studies focused on the potential that schools have in making valuable contributions to the prevention and treatment of childhood obesity (Story, 1999). Eleven controlled experimental studies were reviewed,

and the results showed modest positive short-term results regarding success of these interventions. Story (1999) discussed the need for intervention based on findings that childhood obesity is an epidemic in this country and that childhood obesity results in obesity at the adult level. Story stressed the potential that schools have to make major contributions to the treatment of childhood obesity. However, Story noted, research and publications on the long-term success of school-based interventions were limited.

In an effort to develop practical and effective guidelines for school-based obesity reduction programs, Shaya et al. (2008) studied school-based obesity interventions. Participants included children between the ages of 7 to 19 years old. Their height and weight were reviewed for a duration of 20 years. A total number of 51 intervention studies were reviewed. As many as 15 intervention studies focused solely on physical activity, 16 of them utilized educational models, and 20 used both. At the end, a total of 40 studies reported short-term positive statistically significant results between the baseline and follow-up measurements. The conclusion made from this overall review suggests promising positive effects on reducing obesity and behavior modifications of children in school. However, due to the variety of interventions, it is not clear which interventions had the greatest impact on reducing obesity and modifying behavior.

In a study focused on developing healthy lifestyle behaviors in children, Gortmaker et al. (1999) evaluated the impact of a school-based health behavior intervention known as Planet Health on obesity among 1,295 children in grades 6 to 8 from different socioeconomic and ethnic backgrounds. The prevalence, incidence, and remission of obesity were assessed using before and after measurements (BMI and skin folds). The subjects participated in a 2-year interdisciplinary school intervention program

that included: increased physical activity, decreased fat consumption, and increased consumption of fruits and vegetables in daily diet at school. The results of the study suggested that this school-based intervention with children had a significant effect on the participating girls in comparison with the control groups, but no significant change was observed among boys. One can conclude from this study that utilization of Planet Health intervention in schools might have promising effects on preventing obesity among children, especially in females. Similar to other school-based interventions however, follow-up was not conducted to determine the long-term effectiveness of this intervention.

A study conducted in schools in Switzerland concluded that schools were a crucial setting in which to utilize and implement strategies to prevent childhood obesity (Torre et al., 2010). Researchers hypothesized that children spend the vast majority of their days at schools, and as such, they are where the implementation of current obesity prevention must take place. Using qualitative methods, the researchers solicited the opinions of school directors, physical education teachers, catering staff, school nurses, health educators, parents, and adolescents on current obesity prevention strategies. Even though all agreed on the implementation of nutritional standards for food and drinks offered in schools, they believed that making healthy items look more attractive was the best approach in achieving the goal of better eating habits. Participation in physical activity and after-school activities, regardless of physical condition and weight status, was also considered important by participants. It was important to the participants that all stakeholders be integrated into the movement of obesity prevention. In conclusion, the participants agreed that the school setting was the proper setting for the

implementation of these childhood obesity prevention strategies. While stakeholders stressed the importance of government involvement and support of interventions, Torre et al. argued that it was important to give the schools autonomy to adopt programs that are relevant to the school's needs and circumstances. Unique to this school-based intervention study, was the participants' belief that all stakeholders join in the efforts by sending a consistent, coherent message regarding childhood obesity prevention and supporting parents in their efforts.

These school-based intervention studies indicated some positive effects, but as noted, most with the exception of Torre et al. (2010), did not engage parents or aspects of children's environment outside of the school setting as the part of the intervention. As explained in Chapter 1, the conceptual framework that guides this study incorporates components of Epstein's School, Family, and Community Partnership Model (Epstein, 2011), and Golan and Weizman's (2001) conceptual model of the familial approach to the treatment of childhood obesity. Epstein (2009) proposed that successful education programs require the involvement and partnership between the family, community, and school. Golan and Weizman (2001) view the familial approach to the treatment of childhood obesity as consisting of changes in parental cognition, behavior, and environment as they relate to a healthy lifestyle. Both Epstein (2009) and Golan and Weizman (2001) emphasize the importance that the environment plays in making effective changes. Research as to the role environment plays in the prevention and treatment of childhood obesity will be presented in the following section

Environmental Effects

There are several studies that have examined the effect of environment on

childhood obesity (Cullen, Baranowski, Rittenberry, & Olvera, 2006; O'Brien et al., 2007; Van der Horst, Oenema, Ferreira, Wendel-Vos, Giskes, & van Lenthe, 2007). These studies suggest that the home environment is pivotal in the formation of children's nutritional and fitness habits. For example, Van der Horst et al. (2007) conducted a systematic review of 58 papers dealing with socio-cultural and economic environmental factors at the household level, and examined how these factors correlated with obesity-related dietary behaviors in youth. Most consistent associations were found between socio-cultural factors such as parental intake and children's fat, fruit/vegetable intakes, parent and sibling intake with adolescent's energy and fat intakes, and parental education with adolescent's fruit/vegetable intake. Van der Horst et al. (2007) concluded that parental intake and education play an important role in children's and adolescents' food intake. Similarly, O'Brien et al. (2007) studied the ecology of childhood overweight through a twelve-year longitudinal analysis in which they studied children's interactions with their mothers, the home environment, and opportunities for physical activity. They concluded that the home environment and parent interaction in children's early years played a role in development of overweight or staying within the normal weight.

In a similar study, Cullen et al. (2006) conducted a qualitative study of social-environmental influences on children's diets with African-American, Caucasian, and Mexican-American children and their parents. Through separate focus groups with children in grades 4 to 6 and parents, the researchers discovered factors that influenced healthy food choices in children. Availability and accessibility of healthy foods, TV, peer, and parent factors were found to influence consumption across all ethnic groups. Significant findings included parents' eagerness to learn appropriate methods for creating

an environment that provided healthy food choices.

Lane (2001) has argued that “school-based interventions often affect one certain behavior and lasts only as long as the interventions are maintained. In order for a change in behavior to be effective, it needs to remain changed in different settings, home, school, social activities” (p. 370). Noting the critical role environment plays in childhood obesity, research suggests the importance of interventions that link schools and parents through parent education (Cooke et al., 2003; Golan, Weizman, Apter & Fainaru, 1998; Golan & Crow, 2004; Skidmore & Yarnell, 2004). The following section focuses on the research on school-based parent interventions.

School-Based Parent Interventions

Studies suggest that influential efforts to improve healthy eating habits among children may result through the education of children and also their families (Cooke et al., 2003; Skidmore & Yarnell, 2004). School-based parent interventions may be defined as partnering with schools to implement interventions that focus on educating the parents regarding healthy lifestyles. According to Reschly (n.d.), parent and family levels of involvement may vary. However, school-based, parent-focused interventions involve parents in an intervention that has been implemented to improve healthy behavior in parents and their families. These types of interventions have been designed outside of the regular school curriculum and specifically target parents. According to the American Academy of Pediatrics (2003) early interventions are necessary in that increasing awareness of parents is critical. Lobstein, Baur, and Uauy (2004) have also concluded that a whole-family approach appears to be vital. This shows that outcomes are improved if the parents are either the key instigators, part of the process, or engaged in the entire

process of childhood obesity prevention.

This section of the literature review examines studies that have focused and supported the role of parents as agents of change to prevent childhood obesity.

According to a new survey conducted by the American Dietetic Association Foundation (ADAF), when parents are informed about healthy eating and are connected with their children, the child's eating behavior changes (ADAF, n.d.). Studies conducted by other researchers (Golan et al., 1998; Golan & Crow, 2004) support the focus on parents as the target audience for nutrition training designed to improve the health status of the family. Golan et al. (1998) compared two family-based approaches for the treatment of childhood obesity. In one approach, parents served as the exclusive agents of change, and in another approach, children served as the agents of change. The results were positive and in favor of the parents as agents of change approach.

There are a number of studies which support the work of Golan et al. (1998) showing that parents can have an influence on the eating and physical activity levels of their children (Evans et al., 2011; Golan & Crow, 2004; Gruber & Halderman, 2009; Hopper, Munoz, & Gruber, 2005; Peterson & Fox, 2007). According to Gruber and Halderman (2009), the family environment is key when trying to treat and reduce childhood obesity, and parents are most generally the primary agents of change. Thus, Gruber and Halderman argued that education should be focused towards the parents, which in turn will facilitate change in the overall family environment. They also indicated a need for changing family behavior which, they posit, will reduce obesity.

Peterson and Fox (2007) conducted a review of several studies involving obesity interventions. Their objective was to provide a resource that could help develop and

implement school-based obesity prevention plans and designs. Their review supported the importance of school-based programs and inclusion of parents in the interventions. The review by Peterson and Fox suggested that family environment could contribute to the development of childhood obesity. The family is the foundation for setting healthy customs. It is a basis for mediating societal influences on children by instilling both cultural and family values in a child, which in the long term will affect their overall lives. Both parents and primary caregivers play a major role in shaping a child's dietary practices and overall physical activity. Parents set the overall policy of the home environment. They make the decisions on what foods are available to a child as well as the type of physical activities that are available. They further control the economics of the home environment, and in turn control what comes into the home.

In a subsequent study to Story's (1999) research calling for long-term follow-up studies of school-based interventions, Golan and Crow (2004) researched the benefits of treating childhood obesity with parental involvement. Seven years after program termination, the results showed reductions of overweight by 29% in the parent-only group vs. 20.2% in the children-only group. The family-based health-centered approach, that targeted parents only, showed greater weight loss at all follow-up visits from year 1 to year 7. The results clearly show the need for parental intervention as it relates to a healthy environment, healthy eating, and activity patterns. In addition, Golan and Crow stressed the importance of a health-centered approach rather than a weight-centered approach in the treatment of childhood obesity. In a similar study, Hopper et al. (2005) studied 238 third grade children to determine the effect of a school-based family fitness and nutrition class. The control group consisted of children only versus the treatment

group, which included a parent component and activities to be conducted by parents and children at home. The results indicated that children in the treatment group, which included a parent component, scored higher on posttest knowledge and had lower total fat intake. It can be concluded that involving parents in the intervention was more effective than including children only, however no follow-up was conducted to determine if positive changes were sustained.

In a previous study, Hopper, Munoz, Gruber, and MacConnie (1996) studied 97 second and fourth grade children and 27 parents. The objective was to evaluate a school-based nutrition and exercise program with parents. A posttest was administered immediately after the ten-week study to determine the changes in dietary behavior and family participation. It clearly showed a positive impact on family participation and changes in dietary behavior. They concluded that inclusion of parents in intervention leads to increased parent nutrition knowledge and short-term dietary changes for children.

Several researchers (Davison, Butting & Birch, 2003; Katz, Katz, Treu, Reynolds and Njike, 2011; McGarvey, Keller, & Forrester, 2004) have looked at changing physical activity behavior, and have shown that parent-focused interventions have been more effective in making physical activity and behavior changes in both parents and their families. For example, Katz et al. (2011) conducted a study involving 1,180 elementary students and parents. As a part of the intervention, parents received written nutrition materials at home, and information about label reading was given at school functions. Results indicated that parents showed a significant increase in nutrition label literacy. Katz et al. concluded that the involvement of parents in the intervention increased parent nutrition knowledge.

McGarvey et al. (2004) similarly found that parent-focused interventions have been able to change parent behavior. They studied parents of children served by the Virginia Women, Infants, and Children (WIC) program. The childhood obesity intervention was targeted for preschool children and their parents. The program promoted behavior changes to help prevent obesity. The results indicated an increase in parents engaging in active play with their child and offering water instead of juice or other drinks to their children.

These studies would suggest that parent involvement in obesity interventions is critical. According to Rudolph (2009), “Indeed it could be argued that children's lifestyles can only change for the better if they live in a household where adults are leading a healthy life themselves” (p. 9). Several studies (Blom-Hoffman, Wilcox, Dunn, Leff, & Power, 2008; Davison et al., 2003; Gross, Pollock, & Braun, 2010; Rudolph, 2009) have explained that when parents act as role models in changing their own nutrition and physical activity behavior, there is logistical support for the children. For example, Davison et al. (2003) found that if parents improved their own physical activity, their children’s level of physical activity was likely to increase.

Rudolph (2009) has argued for the encouragement of parents and caregivers to act as models of a healthy lifestyle. Rudolph found a positive correlation between parents modeling healthy behaviors and children improving their eating behaviors and physical activity. In addition, he suggested the importance of parents being role models in encouraging their children to eat new foods. He also provided a list of interventions that support strategies to encourage healthy lifestyles. Rudolph also suggested the importance of parenting skills, which should include firmness, while being accepting and warm, and

the importance of family mealtimes, when modeling healthy lifestyle behaviors: “The emphasis on involving the whole family reinforces parents’ attempts to model a healthy lifestyle” (Rudolph, 2009, p. 14).

Furthermore, children think it is important for their parents to be involved. A study was conducted by ARAMARK Education in 2010 called the Student Viewpoint (ALAS, 2011). This study looked at family influence, parent involvement, and the importance of communication. Researchers asked 40,000 middle school and high school children to describe their eating behaviors during lunch and break in the cafeteria. Parent-child relationship and communication were shown to have a significant influence on the nutritional habits of children. The study found that when parents talked to their children about food choices, a child’s healthy food consumption increased from 44% to 73% (ALAS, 2011). As reported by the students, there was also an increase from 27% to 63% in label reading among children and making better food choices. Results clearly showed that parent involvement was the reason for making better food choices. However, results indicated that less than half of parents frequently communicated with their children, and 39% of children said that they would love for their parents to talk to them and help them make healthier choices (ALAS, 2011). These results would suggest children value their parents as role models.

Similarly, Gross et al. (2010) examined family influence as a key to increasing the consumption of vegetables and fruits among fourth and fifth grade students. Researchers found that parents influence children’s food preferences and intake patterns through the food they make available, the types of child-feeding practices they use, and their own eating behavior. The results of this study suggested that nutrition interventions designed

to increase a child's fruits and vegetables intake should clearly target parental intake and feeding practices. The study further suggested targeting parents for interventions such as explaining the importance of the effect of their behavior on their children's fruits and vegetables consumption.

Reinaerts, de Nooijer, van de Kar, and de Vries (2008) conducted a qualitative study on the perceptions of parents and their children around a school-based intervention promoting the consumption of vegetables and fruits among families. Approximately 104 children and 28 parents were interviewed through ten group sessions. The results indicated that when teachers and parents modeled consuming fruits and vegetables, and when fruits and vegetables were accessible to the children, the children were more likely to increase their consumption of fruits and vegetables.

The results from these studies suggest school-based parent intervention programs that increase parent knowledge and skills and recognize parents as role models are effective, at least in the short term. Studies specifically addressing the components of school-based parent education programs to include curriculum design (Evan et al., 2011; Gable & Lutz, 2000; Schwartz and Puhl, 2003; Wechsler, McKenna, Lee & Dietz, 2004) and cultural considerations (Ayala, Baquero, Arredondo, Campbell, Larios, & Elder, 2007; Branscum & Sharma, 2011; LCHC, 2006) are examined in the following section.

Components of parent intervention programs. As previously discussed, there are studies that suggest the need for parental involvement and education to combat childhood obesity (ARAMARK Education, 2010; Golan et al., 2001). Research has reinforced the need to increase the knowledge base of parents in order to effect the change that is necessary in the family (Golan & Weizman, 2001). The parents, through

increased knowledge, can learn and appreciate the importance of a non-diet approach (Savoye et al., 2005). Studies have also suggested that parents need tools and resources to implement changes in their own behaviors, as well as those of their families, and to communicate with their family (Borra, Kelly, Shirreffs, Neville, & Geiger, 2003; Evans et al., 2011; Wechsler et al., 2004).

Savoye et al. (2005) conducted a study to determine the effectiveness of a weight management program curriculum, and to examine whether a relationship existed between the type of diet method utilized and improved weight and psychosocial outcomes in obese adolescents. Parents and adolescents attended nutrition education classes focused on non-diet, curriculum teaching label reading, balancing meals, portion sizes, making better food choices, recipe modification, and healthful snacks. Results suggested that a weight rebound may not occur after weight loss if a non-diet approach curriculum is used, as it may teach the skills necessary to maintain weight loss and making changes gradually. Specifically, it was found that the use of a non-diet approach curriculum gave parents and adolescents the tools and foundation to make better food choices over time.

Similarly, Wechsler et al. (2004) found that curricula are more likely to be effective in improving health behaviors when they teach skills needed to adopt healthy behaviors and provide ample opportunities to practice those skills. Wechsler et al. also suggested that curriculum should focus on helping participants overcome barriers by providing them with ways to adopt healthy behaviors.

In another study, Evans et al. (2011) conducted research with low-income parents of preschool-aged children in an urban center in Texas. The purpose of the study was to obtain more in-depth information from this specific population group to guide the

development of culturally relevant nutrition interventions and curriculum. The authors concluded that in terms of location and time of day, schools were deemed “ideal” locations. Participants preferred classes to be held during school hours so they did not have to bring the children and become distracted. Regarding the audience for community-based nutrition classes, respondents suggested that husbands and fathers should also be invited and included. Regarding topics that should be covered in community-based nutrition classes, participants expressed their desire to improve healthy eating in their households. Researchers concluded that parents would prefer a curriculum that teaches the skill to purchase and prepare meals that include low-cost and traditional Mexican ingredients, using hands-on activities.

Another study indicated the tools and curriculum needed to educate parents. Borra et al. (2003), through qualitative studies with children, parents, and teachers, helped identify communication opportunities to promote healthful lifestyles and the prevention of obesity through healthy messages. Simply hoping that children outgrow the problem has been a major barrier for parents of overweight children. Borra et al. found that parents may lack the necessary tools and knowledge to assist their children. The curriculum in the present “A Taste of Good Health” program was designed to provide participants with the knowledge and necessary tools such as healthier recipes and fun ways to increase their physical activity.

Schwartz and Puhl (2003) have argued that although parents are responsible for what their children eat and the health consequences thereof, responsibility must also lie with society and the media. Schwartz and Puhl concluded that this issue needs to be addressed in the curriculum and brought to the attention of parents during interventions.

One of the purposes of the “A Taste of Good Health” program was to educate parents about the consequences. Therefore this study addressed this need in the curriculum.

Culturally appropriate tools will help parents make changes in their lifestyle. Research clearly shows that cultural background may affect families and parental behaviors. Cultural background needs to be addressed in the school-based parent and family education workshops. For example, Ayala et al. (2007) examined the association between family variables and Mexican-American children’s diets. A cross-sectional study with households sampled 187 children between the ages of 8 and 18 who were asked to complete a one-time, self-administered survey, while their mothers participated in a face-to-face structured interview. The results of the study supported the concept that greater family support was directly associated with healthy eating. Researchers concluded the need for culturally appropriate family-based interventions. In addition, Ayala et al. examined the association between family influence and the dietary intake of the children in the study. The strongest and most consistent correlates were availability of fast food in the home and parents purchasing food that their children had seen advertised on TV. It was important for study participants that families support each other for healthful eating and eat meals together. In another study, Branscum and Sharma (2011) conducted a systematic analysis of nine Hispanic childhood obesity prevention programs. They concluded that interventions were successful when incorporating a parental component, sessions were longer in length, and when delivered by staff who were dedicated to and familiar with the Hispanic culture.

Clearly, addressing obesity among Latinos requires an understanding not only of the biological causes of obesity, but also of the culture, values, resources, and

environments that influence eating and physical activity behaviors and choices in Latino communities (LCHC, 2006). Rather than placing blame on lack of self-control, and seeking remedies and quick fixes in weight-loss, the greatest opportunity to halt the obesity epidemic lies in working with the entire population to promote the social and environmental conditions that favor healthy eating and physical activity. Latino communities must be involved in a collaborative and comprehensive effort to improve eating and activity behaviors and environments. According to the Latino Coalition for a Healthy California (2006), education for children and their families is needed, as well as stronger policies to ensure healthy school nutrition and physical activity environments. In addition, safe communities with ample recreational spaces and affordable healthy foods are needed, and there must be an end to the marketing of unhealthy products to children.

Spuijt-Metz (2011) further summarized the importance of family influence on obesity and obesity-related behavior giving an overview of the progress made in childhood and adolescent obesity research in the last decade. Spuijt-Metz stressed the need for large-scale, high-dose, and long-term interventions, taking into account the complex nature of childhood obesity. In sum, as cited here, many studies have suggested the importance of parent involvement in school-based obesity intervention programs, calling their participation essential to the success of the program. In addition, researchers have suggested the curriculum should have a focus on giving parents tools for developing a healthy lifestyle for their families and should be sensitive to the culture of the participants.

Summary of the Literature Review

As described above, childhood obesity is reaching pandemic proportions particularly for Latino families (Carmona, 2003; Deckelbaum & Williams, 2001; Ogden & Carroll, 2010). Research tells us that childhood obesity results in significant health issues for children such as diabetes, heart disease, apnea, and asthma (ADA, 2010; CDC, 2009), psychological issues (Latner & Stunkard, 2003; Puhl & Latner, 2007; Schwartz & Puhl, 2003) as well as poor school performance (Hunt, 2008; Ball et al., 2004; Datar & Sturm, 2006; Datar et al., 2004; Schwartz & Puhl, 2003). In response, schools and agencies across the country have implemented a number of interventions designed to curb this pandemic. However, there are relatively few studies that engage in the systematic evaluation of these interventions, particularly their long-term effects on changing healthful behavior (Story, 1999). What seems to be prevalent in the literature is the importance environment plays in promoting or curbing childhood obesity (Cullen et al., 2006; O'Brien et al., 2007; Van der Horst et al., 2007), suggesting a need for community, school and family partnerships for effective interventions (Epstein, 2009; Golan & Weizman, 2001). Research suggests schools are an ideal place for interventions (Gortmaker et al., 1999; Shaya et al., 2008; Story, 1999; Torre et al., 2010), and interventions that focus on the family as a unit and parents as agents of change appear to be more effective at least in the short term (Golan, 2004). Intervention curriculum should include culturally appropriate nutrition education, physical activity, and healthy cooking tips or ideas for parents and families. It should also include culturally sensitive materials, information, and recipes to be effective to the target audience (ADAF, n.d.; Evans et al., 2011). Though there are a number of studies that have looked at this type of intervention

(Oude Luttikhuis et al., 2009), few studies have examined whether the participants have improved their nutrition knowledge, changed their behavior in cooking, or increased their fitness levels, especially after the completion of the intervention. Many studies as summarized here indicated there is a need for long-term obesity interventions that include the family. In addition, there is a need to conduct follow-up evaluations to determine the effectiveness of these types of programs. This study proposes to add to the current body of literature on school-based parent education interventions by conducting a parent education workshop which includes culturally sensitive curriculum, and that has multi-components such as nutrition education, physical activity, and cooking and evaluating the effectiveness of this intervention both during and three months after completion of the workshops. The following chapter will describe the methods used to conduct this evaluation.

CHAPTER 3

METHODOLOGY

The purpose of this study was to evaluate whether “A Taste of Good Health” school-based parent education program affected healthful behavior in parent participants in a large urban school district by examining whether significant changes occurred at pretest, posttest, and follow-up on the following: (1) participants’ knowledge regarding nutrition, cooking, and physical activity; (2) cooking, eating habits, and physical activity of the participants and their families; and (3) body weight, body mass index (BMI), and percent body fat of the participants. In addition, the study examined participants’ views of the program at posttest and follow-up to guide any changes to the program. Given the pandemic proportions of childhood obesity (American Academy of Pediatrics, 2003; Cole et al., 2006; Foster et al., 2007), and the research calling for the systematic evaluation of school/community partnerships that are focused on family-based interventions, there is a critical need to evaluate programs that can be used in schools and districts implementing school/community partnership interventions with a focus on parent education. Although this program had been successful in increasing nutrition knowledge, based on verbal feedback from previous participants, formal research and follow-up evaluation were needed to determine if families make changes in their nutrition, cooking, and physical activity both during and three months after the completion of the program.

This chapter articulates the methods used to address the research questions. This chapter will describe the research design, research setting, research sample and data

sources, instruments and procedures, data collection and analyses procedures, and the role of the researcher.

Research Design

To address the research questions, this dissertation employed a mixed-methods design (Hanson et al., 2005). The mixed-method design involves the simultaneous collection and analysis of qualitative and quantitative data in order to get rich descriptive data, as well as a well-rounded assessment of the program. According to Hendricks (2009), collecting multiple forms of data is vital to a successful research project, so as to establish validity and credibility. The mixed-methods design can also allow for a triangulation of data (Neuman, 2003). Triangulation, which is the use of multiple sources of data, multiple methods, and at various points in time, can assist in making sure all factions are being studied (Bodgan & Biklen, 2007).

Qualitative and quantitative data can help evaluate trends and commonalities and lend a conceptual understanding of the problem (Bogdan & Biklen, 2007). Qualitative data in the present study were useful for understanding the nature of processes in the program, as well as the family. Qualitative data provided in-depth information regarding participants' perceptions of the parent education classes' influence on their families' nutrition, exercise, and cooking behavior. It gave the study breadth and provided an in-depth understanding with the small sample. The quantitative data allowed the comparison of knowledge and behavioral changes of the parents between the beginning of the program at week 0, week 4, and during follow-up at week 12. A pre-experimental survey design (i.e., pretest, posttest, follow-up design without a comparison/control group) was used to evaluate the effectiveness of the parent workshops.

According to Bogdan and Biklen (2007) these methods are appropriate to the research questions because they allowed the researcher to examine the changes in cooking, physical activity, eating behavior, knowledge, BMI, weight, and percent body fat due to the program. These methods allowed for the investigation of the perceived level of information obtained during class, verifying the utility of the parent education class experience, and offering areas of improvement. The research provided information by comparing participants' cooking, physical activity, and eating behaviors prior to taking the parent education classes and 12 weeks after completing the 4-week series.

Research Setting

This study took place in a culturally-diverse region of Los Angeles County, in which Latino families compose the majority of the population (VCCC, 2010), and obesity and diabetes are major health concerns. A current intervention program at The Center for Healthier Communities (CHC) at Northridge Hospital Medical Center (NHMC) focused on reducing childhood obesity and diabetes through their School-based Obesity and Diabetes Initiative (SODI). The parent education component, called "A Taste of Good Health" focused on increasing awareness and providing guidelines on healthy nutrition choices, food-label reading, recipe modification, smart shopping, and related nutritional and healthy lifestyle information.

The CHC-SODI program of NHMC collaborated with California State University, Northridge (CSUN), Northeast Valley Health Corporation (NEVHC), Women, Infants and Children, and LAUSD to conduct nutrition education and cooking classes in select LAUSD elementary schools. The goal was to increase nutrition knowledge, modify nutrition, and physical activity behaviors, and ultimately counter childhood obesity and

diabetes in the San Fernando Valley. The setting for the school-based parent education workshops was LAUSD, the largest urban school district in California and the second largest urban district in the nation. It serves 694,288 students and has 45,473 teachers. The student population consists of approximately 73% Latino, 11% African-American, 9% White, 4% Asian, 2% Filipino, and approximately 1% other. Approximately 78% of students qualify for free and reduced price meals (LAUSD, 2012). LAUSD was an ideal school district to conduct this research study with its high number of Latinos and students eligible for free and reduced meals.

The program was implemented in five schools in one local district in the LAUSD. As noted earlier, the planned intervention consisted of a 4-week program, meeting once a week for 2½ hours at each meeting, for a total of 10 hours of instruction. The classes were offered to the parents right after student drop-off around 8:30 am in the parent education centers on the campus of each school.

Research Sample and Data Sources

The project recruited parents whose children attended one of five public elementary schools and who were participating in the parent education classes. All schools had similar characteristics, matched on student and community demographics, and parent income levels and educational attainment. Each of the schools had at least 75% or more Latino families and 75% or more of students on free or reduced lunch program. Institutional approval was obtained from the CSUN Office of Research and Sponsored Projects and the LAUSD Office of Research and Evaluation. During the first class session, the researcher, with the aid of a bilingual interpreter, explained the purpose of the study and solicited parent participation (Appendix A). Parents were then asked to

sign written informed consent forms, which was provided in both English and Spanish (Appendix D). Incentives, gift cards, and cookbooks, were used to aid in recruitment.

A total of 202 participants consented to participate in the research study. The selection criteria included:

1. Participants of the class were willing to participate in the posttest and follow-up surveys.
2. Parents who completed at least two out of the four classes.

All parents who agreed were included in the evaluation study.

Instruments and Procedures

The research instruments used included: (1) a self-report survey that contained knowledge and behavior questions on nutrition, physical activity, and cooking; (2) fieldnotes taken during debriefing sessions in weeks 4 and 12; and (3) a log containing the body weight, BMI, and body fat percent of participants. The survey was piloted prior to use to ensure validity and reliability. The survey was administered at the beginning of the first session of the first parenting class, at the end of the fourth workshop session at week 4, and at the follow-up session at week 12. The researcher administered the surveys, acquired the participants' body characteristics, and conducted debriefing sessions as outlined in the next subsections. Please see Appendix A for the pretest survey and questionnaire, Appendix B for posttest and follow-up survey and questionnaire, and Appendix C for debriefing questions.

Procedures for Survey Administration

The survey consisted of 46 questions asking participants to report how many times per week the participants and their families were eating foods from different food

groups, using various cooking techniques, and engaging in physical activity. Eight items assessed the cooking techniques, 38 items assessed eating habits of participants and their families, and three items assessed physical activities of participants and their families. In addition, 33 items on the survey measured nutrition and cooking knowledge of participants and their families, and 10 items measured participant knowledge regarding the importance of physical activity at pretest, posttest, and follow-up.

The 46-items designed to assess the cooking and eating habits of the participants and their families corresponded to the cooking techniques and healthy eating habits that were presented in the curriculum. Using a scale of 0 = *Never*, 1 = *Once a month*, 2 = *1-3 days per week*, 4 = *4-6 days per week*, 5 = *6 or more times per week*, and 6 = *1 or more times per day*, the participants were asked to report how often they and their family engaged in various eating habits in the last month. Items included such questions as (1) “How often do you or your family members remove the skin and trim the fat when cooking meats and poultry?” (2) “How often do you or your family members eat fried food (e.g., French fries, fried chicken)?” The items on the survey were entered and analyzed individually.

The three items developed to assess the physical activity of the participants and their families corresponded to the physical activity that was encouraged in the curriculum. Using a scale of 0 = *Never*, 1 = *Once a month*, 2 = *1-3 days per week*, 4 = *4-6 days per week*, 5 = *6 or more times per week*, and 6 = *1 or more times per day*, participants were asked to report how often they and their family engaged in the following physical activities in the past month: (1) “Walk for 30 minutes or more a day,” (2) “Engage in aerobic activity (e.g., jogging, biking, swimming),” and (3) “Are involved

in a group activity (e.g., organized sports, soccer, basketball, baseball).” The items on the survey were entered and analyzed individually.

The 38-item nutrition and cooking knowledge portion of the survey and 10-item physical activity portion were also developed based on the information taught in the curriculum. Participants were asked to respond to questions regarding nutrition, physical activity, and cooking. Two sample items follow: (1) “How many total servings of fruit and vegetables do you need per day? a. 1-2 Servings, b. 3-4 Servings, c. 6 or More Servings, d. None of the Above, e. Not Sure”; and (2) “Eating breakfast will help maintain your weight. 1. Yes, 2. No, 3. Not sure.” For each item, participants were encouraged not to guess, and they were given a ‘not sure’ option. Each item was scored with 1 = *correct* and 0 = *do not know*. Thus, the “do not know” score encompassed when participants marked the incorrect item or answered “not sure.” There were 10 items on physical activity knowledge section. For each of these items, participants were encouraged not to guess, and were given a “not sure” option. Two sample items follow: (1) “What is the minimum amount of exercise you should do per day? a. 10 minutes, b. 30 minutes, c. 40 minutes, d. 1 hour, e. Not Sure”; and (2) “Exercise is important to reduce the risk of disease. 1. Yes, 2. No, 3. Not sure.” Each item was scored with 1 = *correct* and 0 = *do not know*. Thus, the “do not know” score encompassed when participants marked the incorrect item or answered “not sure.”

Procedures for Measuring Body Weight, Body Mass Index (BMI), and Percent Body Fat

Body weight was determined using a standing weight scale at the school site. The participants stood on the scale without adornments (e.g., purse). Their weight was

recorded in pounds. Body mass index (BMI) was calculated with the following formula: $BMI = (\text{weight} / \text{height}^2) \times 703$. Weight was in pounds and height was measured in inches using a measuring tape and a wall or the height measuring on the scale.

Percent body fat was measured using a bioelectrical impedance analysis (BIA) measuring instrument. One of the requirements of the BIA instrument was for the participants to not eat or drink within 1-2 hours of measurement. Participants were asked not to drink or eat at least an hour before. These measurements were repeated during the final session of the workshop at week 4 and at the follow-up session at week 12. Gift cards and cookbooks were given as incentives to the participants at week 4 and week 12 to aid in bringing parents back to complete the posttest and follow-up surveys and measurements.

Procedures for Administering Posttest and Follow-up Qualitative Debriefing Questions

During week 4 posttest and week 12 follow-up sessions, in addition to participants completing the survey, a debriefing session was held with each group. As noted above, to gain more in-depth information regarding participants' lifestyle changes, they were asked to respond to a series of open-ended questions through debriefing sessions in which they were asked to report on the impact the intervention had on their cooking, eating, and physical activity as well as their feedback about the usefulness of the intervention program.

The questions asked during week 4 posttest sought recommendations for changes to improve the program and workshops overall. The survey and debriefing questions were presented in Spanish and English; however, all participants preferred Spanish.

Responses were transcribed and the researcher coded for themes that were most common across all sites as to changes recommended for program improvement by participants. During the debriefing session in week 12, approximately 108 participants were in attendance. Participants were encouraged to share with the group any changes they and their families had made in their cooking, and/or eating habits, and/or physical activity behaviors. Responses were transcribed and the researcher coded for themes that were most common across all sites as to changes in cooking, eating habits, and physical activity. In addition, during this week 12 follow-up, during a one-on-one session with each participant while they were being weighed, each participant was asked to describe how the program had benefited their children and their family. Ninety-one participants responded to this question and their responses were transcribed and coded for themes related to reported changes in behavior.

Intervention

The planned curriculum consisted of a 4-week program, meeting once a week for 2½ hours at each meeting, for a total of 10 hours of instruction. The program was implemented in five schools in same administrative local district in LAUSD. Each class consisted of 30 minutes lecture, 30 minutes physical activity, 30 minutes hands-on learning activity, and 30 to 60 minutes of cooking and taste testing. The topics covered included label reading, physical activity, eating healthy meals, shopping and dining out tips, importance of breakfast, easy cooking techniques, and recipe modifications.

As noted above, 73% of the population in LAUSD is Latino. The participants in this study were all Spanish-speaking Latinos. A bilingual registered dietitian (RD) who had been trained through the dietetic internship program at California State University,

Northridge taught the classes. All classes were coordinated and taught by the bilingual RD and at least two trained bilingual graduate nutrition and dietetic students serving as research assistants. The research assistants were trained by the researcher to assist with data collection, note taking, data coding, and assisting with cooking and physical activity. The assistants helped purchase foods, make copies, and purchase supplies.

Data Collection

All measurements were performed at week 0 (baseline), again at week 4 (posttest), and at week 12 (follow-up). The pretest surveys were administered during the first class meeting at the beginning of the study and again at week 4 and the week 12 follow-up.

As noted above, qualitative data were collected from participants in the program through debriefing sessions at week 4 and week 12, in addition to one-on-one questions at week 12. All data were taken back to a university office for coding, entry, and verification by the researcher and research assistants.

Data Analyses

The Taste of Good Health Logic Model process (Figure 1.1) helped the researcher evaluate the effectiveness of the school-based parent workshops in helping to increase knowledge, change behavior, and make changes in weight and percent body fat. The model described the process and linkages between the program or study resources, the program activities, the program outputs, the program participants, and the program outcomes related to childhood obesity. It also showed logically whether using a set of resources (schools, the community and the family), and using parents as agents of change had an influence on the parents' knowledge and behavior in the short term.

Quantitative Data Analyses

All quantitative data were analyzed using the Statistical Package for the Social Sciences (SPSS) 20.0 on Macintosh computer. SPSS is a computer software designed to conduct social science statistical analyses. Repeated measures analyses of variance (ANOVAs) were used to analyze the significant differences between pretest, posttest, and follow-up. If a significant difference was found, then post hoc analyses were conducted to examine if the differences were between pretest and posttest, posttest and follow-up, and/or pretest and follow-up. The ANOVAs were used to determine significant differences in (1) nutrition and cooking knowledge; (2) physical activity knowledge questions; (3) body weight, percent body fat, and BMI; and (4) cooking techniques, eating habits, and physical activity of participants and their families.

Qualitative Data Analyses

At each of the schools, two bilingual research assistants recorded participants' comments and answers during the debriefing sessions in week 4 and week 12 and the one-on-one questioning session in week 12. The bilingual research assistants compared their answers with each other and the researcher right after the session. In preparation for data analyses, the Spanish transcriptions of debriefing notes from week 4 and week 12 and responses to the one-on-one questions in week 12 were translated into English by the trained bilingual research assistants and double-checked for accuracy.

The researcher coded answers based on the predetermined themes from the conceptual framework and literature (see Table 3.1) that emerged through the debriefing and one-on-one sessions. Then the researcher collapsed the themes to come up with the final codes. Constructivist Grounded Theory (CGT) (Charmaz, 2004) was used to

identify patterns and themes that emerged from the qualitative data. The CGT approach provides qualitative researchers a clear, ordered, and systematic analytical plan from which to develop an explanatory model that specifies the impact of the program.

Table 3.1

Qualitative Codes and Themes

Codes	Predetermined Themes	Additional Themes Emerged and Identified
Changes in Cooking (CC)	Healthier meals for families Parents cook healthier	Frying less and using less oils Changes in techniques such as grilling
Changes in Exercise (CE)	More walking More physical activity	More walking as a family and more physical activity Getting variety and additional activities such as biking, dancing, etc. Involving children in more sports and group physical activity
Changes in Nutrition and Eating Habits (CN)	Making healthy family food choices	Lowering portion sizes Less soda & more water Eating less fat Eating more fruits/vegetables More meals at home

Next, the researcher and two trained coders read the recorded answers of all of the qualitative data, taking notes on themes that emerged. The identified themes from the literature and the initial reading of the transcripts were used to develop the predetermined themes for the second level coding. Next, the three coders engaged in open coding where additional themes (see Table 3.1) were identified and modified. The debriefing question

and one-on-one answers were then coded and compared to the study's research questions. The researcher collapsed the themes to come up with the final codes. Once the codes were identified, the codes were clumped together using the "Taste of Good Health" Logic Model to get at the major themes. The codes, themes, and results were then checked by colleagues as a form of member checking. The similar responses and codes were then counted to get frequency counts for both the debriefing data and the one-on-one data.

In addition, relevant text was categorized into themes. The selective coding took place where the data were examined for theoretical implications. These implications were used to evaluate the program with the goal of helping program developers improve the program by capitalizing on aspects of the program that were most effective, as well as understanding how and whether parents made changes in healthful eating and physical activity at home.

The three coders placed each theme into tables. The tables were devised to track whether the theme was mentioned at each school. The researcher then pulled out quotes that demonstrated each theme.

Role of the Researcher

The researcher is a faculty member at California State University, Northridge and serves as the dietetic internship director involved with conducting internship orientations, training, and accreditation processes. She is familiar with the intervention and had worked on this and similar projects prior. Some assumptions already existed about the potential findings of the study. Potential bias lay in two factors: (1) the researcher was closely tied to the field of nutrition and obesity prevention; (2) the researcher was personally familiar with the SODI program. The researcher was aware of the potential

bias and only participated in collection and analyses of the data. The researcher was not teaching any of the workshops. According to Peshkin (1988), researcher subjectivity can be both enabling and disabling. One must always be aware of subjectivity and guard against surprise (Peshkin, 1988). Researcher subjectivity was monitored by using the following techniques. The researcher wrote reactions and thoughts throughout the process and then compared them through interactions and discussions with others. For example, if she felt uncomfortable about misinformation or confusion as to the nutrition topic discussed, she made notes and then shared thoughts with the presenters and or participants after the session. Consulting with colleagues is another excellent way to monitor subjectivity, and was used by the researcher. In addition the researcher consulted with other Registered Dietitians and parents working on similar projects, an important avenue of approach. Finally the researcher found that keeping analytical memos and thinking out loud were important tools.

Summary

This chapter described the research design, research setting, research sample and data sources, instruments and procedures, data collection and analysis, and the role of the researcher. This pre-experimental research design used mixed-methods, surveys, debriefing sessions, one-on-one questions, and measurements of body weight, BMI and percent body fat were collected. The research setting was five schools in LAUSD, using data sources from 202 parents who attended the workshop series, and analysis from 108 parents who participated in pretest, posttest, and follow-up sessions. The instruments used were a survey, debriefing sessions, one-on-one questions and weight scale/BIA. The procedures included collecting survey and weight/BIA data at week 0, week 4, and

week 12 follow-ups. Quantitative data analyses consisted of repeated measures ANOVAs testing for significant differences in cooking, eating habits and physical activity at pretest, posttest, and follow-up to determine changes in behavior and knowledge. Repeated measures ANOVAs were also used to analyze the significant differences in body weight, percent body fat, and BMI at pretest, posttest, and follow-up. Qualitative data analyses consisted of the coding of responses from open ended questions at debriefing sessions at week 4, week 12, and one-on-one questioning of each participant during the weighing session at week 12. Chapter 4 presents the findings from the study.

CHAPTER 4

RESULTS

The purpose of this study was to evaluate the effectiveness of “A Taste of Good Health,” a school-based parent education program designed to affect healthful behavior in parent participants and their families in a large urban school district. Participant nutrition, physical activity, cooking knowledge, and BMI were measured before, during, and three months after the parent education intervention. Although this program has been successful in increasing nutrition knowledge, based on verbal feedback from previous participants, no follow-up evaluation to determine whether participants and their families made changes in their nutrition, cooking, and physical activity both during and three months after the completion of the program had been previously completed.

To augment quantitative evaluation data, the study examined participants’ views of the program at both posttest and follow-up to inform changes to the program and the workshops. Given the pandemic proportions of childhood obesity (American Academy of Pediatrics, 2003; Cole et al., 2006; Foster et al., 2007), and the research calling for the evaluation of school/community partnerships focused on family-based interventions, there is a critical need to evaluate programs that can be used in schools and districts implementing school/community partnership interventions with a focus on parent education.

. In order to evaluate how “A Taste of Good Health” classes affect healthful behavior in parent participants and their families, it was hypothesized that providing an

intervention which focused on educating parents on nutrition, physical activity, and cooking will result in the adoption of a more healthy lifestyle.

The study addressed the following four research questions:

1. Are there significant differences between pretest, posttest, and follow-up on participants' knowledge regarding nutrition, cooking, and physical activity?
2. Are there significant differences between pretest, posttest, and follow-up on body weight, body mass index (BMI), and percent body fat of the participants?
3. Are there significant differences between pretest, posttest, and follow-up on cooking, eating habits, and physical activity of the participants and their families?
4. What comments, observations, and suggestions do participants of the program have to guide any changes to the program?

This chapter will be organized by a brief review of the methods followed by the results of the study organized by research questions. For research question one, the results will be displayed and discussed based on the quantitative analyses of the change in nutrition, cooking, and physical activity knowledge. For research question two, the results will be displayed and discussed based on the quantitative analyses of the changes in weight, BMI, and percent body fat. For research question three, the section will be organized by both quantitative and qualitative results. The quantitative results will be organized by three main sections: (1) cooking, (2) eating habits, and (3) physical activity. Each subsection in question three will be followed by qualitative results from the debriefing sessions in week 4, week 12, and the one-on-one sessions in week 12. Research question four will only include qualitative analyses and will be organized based on themes. There will be a summary at the end of the chapter

Overview of Methods

To address the research questions, this dissertation employed mixed-methods (Hanson et al., 2005) and pre-experimental survey design (i.e., pretest, posttest, follow-up design without a comparison/control group) in evaluating the effectiveness of the parent workshops.

As noted earlier, the planned intervention consisted of a 4-week program, meeting once a week for 2½ hours at each meeting, for a total of 10 hours of instruction. The program was implemented in five schools in one local district in LAUSD. In order to measure the effectiveness of the intervention in changing participants' knowledge and behavior, quantitative data were collected through survey administration. A total of 202 participants consented to participate in the research study. There were 19 participants in school one, 38 participants in school two, 62 participants in school three, 51 participants in school four, and 35 participants in school five who completed the pretest. A total of 202 pretests were completed. Of the 202 participants, approximately 149 completed the posttest, and 108 participants completed the follow up surveys. All survey data were coded and then entered into an Excel spreadsheet. The analyses were run in Statistical Package for the Social Sciences (SPSS) 20.0 on Macintosh computer.

To augment the quantitative data, qualitative data were collected from participants in the program during debriefing sessions at week 4 and at the follow up sessions in week 12. In addition, during the follow up sessions in week 12, one-on-one questioning was completed with each participant while they were being weighed. The following questions were asked during the week 4 large group debriefing session at each site to determine what changes were recommended for the overall improvement of the program

and workshops.

1. How can this program be changed or improved to be more helpful to you?
2. Which parts of the program were most useful?
3. Which parts of the program were least useful?

The questions asked during the debriefing sessions with all participants at week 12 follow-up were as follows:

1. What are some changes that you and your family have made to your cooking techniques because of the program?
2. What are some changes that you and your family have made to your eating and nutrition behaviors because of the program?
3. What are some changes that you and your family have made to your physical activity behaviors because of the program?

During the week 12 follow-up session, each participant was individually asked to explain from their perspective how the program had benefited their children and family.

Quantitative Analyses

Repeated measures of analysis of variance (ANOVAs) were used to analyze the significant differences between pretest, posttest, and follow-up. If a significant difference was found, then post hoc analyses were conducted to examine if the differences were between (1) pretest and posttest, (2) posttest and follow-up, and/or (3) pretest and follow-up. Post hoc analyses were considered significant if $p < .05$. The sample size for each analysis was determined by the number of participants who completed the specific survey question at pretest, posttest, and follow-up. Since some participants did not complete an item at either pretest, posttest, or follow-up, there is a different sample size (n) for some

analyses.

Qualitative Analyses

During the week 4 posttest and week 12 follow-up sessions, in addition to participants completing the survey, a debriefing session was held with each group. There were 149 attendees in the week 4 debriefing sessions: 13 participants in school one, 26 participants in school two, 43 participants in school three, 42 participants in school four, and 25 participants in school five. The questions asked during week 4 posttest were to determine what changes participants recommended to improve the program and workshops. Responses were transcribed, and the researcher coded for themes that were most common across all sites in regards to recommended changes. During the debriefing session in week 12, approximately 108 participants were in attendance: ten participants in school one, 23 participants in school two, 31 participants in school three, 19 participants in school four, and 15 participants in school five. Participants were encouraged to share with the group any changes they and their families had made in their cooking, eating habits, and/or physical activity behaviors. Responses were transcribed, and the researcher coded for themes that were most common across all sites as to changes in cooking, eating habits, and physical activity. In addition, during the one-on-one session at the week 12 follow-up, each participant was asked to describe how the program had benefited their children and their family. Ninety-one participants responded to this question, and their responses were transcribed and coded for themes related to reported changes in behavior.

Results

Research Question 1

Are there significant differences between pretest, posttest, and follow-up on participants' knowledge regarding nutrition, cooking, and physical activity?

The ANOVAs indicated significant differences between pretest, posttest, and follow-up on (1) nutrition and cooking knowledge, and (2) physical activity knowledge (see Table 4.1). Post hoc analyses indicated that nutrition and cooking knowledge was significantly higher at posttest and follow-up than it was at pretest. Similar results were found for physical activity knowledge.

Table 4.1

Repeated Measures ANOVA Physical Activity, Nutrition, and Cooking Knowledge

	N	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		<i>F</i>	<i>p</i>	eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Nutrition and cooking knowledge	88	.56 ^{ab}	.21	.67 ^{ac}	.17	.72 ^{bc}	.16	43.22	.00	.33
Physical activity knowledge	88	.78 ^{ab}	.27	.84 ^{ac}	.18	.89 ^{bc}	.16	9.87	.00	.10

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Research Question 2

Are there significant differences between pretest, posttest, and follow-up on body weight, body mass index (BMI), and percent body fat of the participants?

The participants were weighed and measured at the beginning of the program (i.e., pretest). Body weight was determined using a standing weight scale at the school site. Participants stood on the scale without adornments (e.g., purse). Their weight was recorded in pounds and entered into an Excel spreadsheet. BMI was calculated using the following formula: $BMI = (\text{weight}/\text{height}^2) \times 703$. Percent body fat was measured using a bioelectrical impedance analysis (BIA) measuring instrument. These measurements

were repeated during the final session of the workshop at week 4 (posttest) and again at the week 12 follow-up session.

The ANOVAs indicated significant differences between pretest, posttest, and follow-up on pounds and BMI, but no significant differences were found on percent body fat (see Table 4.2). Post hoc analyses indicated that weight (in pounds) was significantly lower at posttest and follow-up than it was at pretest. Post hoc analyses also indicated that BMI was significantly lower at posttest than it was at pretest.

Table 4.2

Repeated Measures ANOVA Pounds, BMI and Body Fat

	N	Pretest		Posttest		Follow-up		F	p	eta
		M	SD	M	SD	M	SD			
Pounds	70	165.44 ^{ab}	39.56	163.46 ^a	39.42	164.16 ^b	38.85	3.83	.03	.05
BMI	70	31.4 ^a	6.92	30.94 ^a	7.01	31.13	6.83	4.31	.02	.06
Body fat	70	36.77	6.24	36.59	6.70	37.03	6.25	1.05	.34	.02

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Research Question 3

Are there significant differences between pretest, posttest, and follow-up on cooking, eating habits, and physical activity of participants and their families?

Changes in cooking: Quantitative analyses. Eight questions on the survey asked participants to report how many times per week they had made changes to their cooking techniques. The ANOVAs indicated significant differences between pretest, posttest, and follow-up on (1) cooking with butter or margarine, (2) grilling and baking, and (3) reading food labels for ingredients (see Table 4.3). However, no significant differences were found on (1) cooking with oils, (2) removing fat before cooking, and (3) cooking together as a family. Post hoc analyses indicated that participants reported significantly

less cooking with butter/margarine at posttest and follow-up than at pretest. Post hoc analyses also indicated participants reported significantly more grilling/baking at posttest and follow-up than at pretest. And finally, post hoc analyses indicated participants read labels significantly more at follow-up than at pretest or posttest.

Table 4.3

Repeated Measures ANOVA for Changes in Cooking

	N	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		<i>F</i>	<i>p</i>	Eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Cooking with oils	86	3.31	1.19	3.01	1.25	3.12	1.13	2.91	.06	.03
Cooking with butter or margarine	82	1.48 ^{ab}	1.04	1.23 ^a	.89	1.23 ^b	.81	3.37	.04	.04
Remove fat before cooking	81	3.27	1.38	3.41	1.27	3.37	1.29	.41	.67	.005
Grilling, baking	83	1.89 ^{ab}	1.10	2.18 ^a	1.34	2.37 ^b	1.15	6.03	.003	.07
Labels for ingredients	72	2.81 ^b	1.71	2.97 ^c	1.47	3.40 ^{bc}	1.40	4.85	.013	.06
Cooking together	85	3.34	1.44	3.52	1.08	3.7	1.20	2.57	.09	.03

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Changes in cooking: Qualitative analyses. To augment the quantitative results, participants at each of the sites engaged in a large group debriefing session during week 12 where they were asked to share any changes they and their families had made to cooking techniques because of the program. As can be seen in Table 4.3a, the most common themes that arose in debriefing sessions at each of the sites were that participants reported baking, steaming, and grilling more and frying less. In addition, participants in all five schools reported they were using more fruits and vegetables when cooking. In all five schools, participants reported they were also using less oil or using different types of oils (e.g., olive, canola, or grapeseed oil, instead of butter or Crisco). Participants in three out of five schools indicated that they made ingredient substitutions

to recipes as such as using (1) turkey meat instead of beef, (2) using whole wheat flour to bake, and (3) choosing healthier condiments such as (a) mustard and vegenaïse over mayonnaïse and (b) using agave or stevia over syrup. These responses suggested that participants were using the knowledge gained during class and were making changing to their cooking techniques and behaviors at home.

Table 4.3a

What are some changes that you and your family have made to your cooking techniques because of the program?

Themes at 12-Week Debriefing on Changes in Cooking	School Number					% Mentioned Theme
	1	2	3	4	5	
Avoid frying foods and choose other methods such as grilling, baking, and steaming	1	1	1	1	1	100%
Use more fruits and vegetables	1	1	1	1	1	100%
Using different types of oils (e.g., olive, grapeseed, and canola oil)	1	1	1	1	1	100%
Making homemade juices; offering water	1	1	1	1	0	80%
Make ingredient substitutions to recipes, choose healthier condiments (i.e., mustard and vegenaïse over mayo)	1	0	0	1	1	60%

1 = mentioned the theme, 0 = did not mention the theme

During the one-on-one questioning session conducted in week 12, participants also confirmed some changes they had made to their cooking techniques when asked how the program had benefited their children and family. Out of 91 respondents, 43 (47%) mentioned making changes to their cooking techniques such as grilling more and frying less. Although survey data were not significant regarding cooking together as a family, 42 out of 91 participants (43%) in the one-on-one sessions reported they and their families were taking an active part in healthy food preparation, selection, and cooking as evidenced by comments such as, “My 7-year-old daughter learned how to read food labels, to read the sodium content and fats. My daughters can also distinguish healthy

foods from the unhealthy ones.” Another participant stated, “We made changes in food preparation, using Quinoa, changing oil and my family has accepted it.” Overall, these comments suggested an interest in involving the whole family in making healthy cooking and food choices. One participant’s comment summarized this theme when she said, “I enjoy cooking with my children. They like participating in the preparation of [meals] ... and often help with the addition of healthy ingredients.”

Changes in eating habits: Quantitative analyses. Thirty-eight questions on the survey asked participants to report how many times per week the participants and their families were eating foods from different food groups. In analyzing data and presenting results, the eating habits have been subcategorized by: (a) carbohydrates such as fruits, vegetables, grains, etc.; (b) proteins such as soy, meats, nuts, etc.; (c) dairy products such as cheese, yogurt, cottage cheese; (d) deserts and sugars; (e) fats; and (f) overall eating habits such as eating as a family or eating at fast food restaurants.

Carbohydrates. The ANOVAs were conducted to compare the pretest, posttest, and follow-up scores on how often the participants and their families reported eating fruits and vegetables, non-sugary cold cereals (e.g., Bran flakes, Cheerios, or Corn Flakes), sugary cold cereals (e.g., Frosted Flakes, Trix, Lucky Charms), hot cereals (e.g., oatmeal or cream of wheat), whole wheat pasta, whole wheat bread, whole grain rice, or whole wheat tortillas, and/or white pasta, bread, rice, or tortillas.

The ANOVAs indicated significant differences between pretest, posttest, and follow-up on (1) eating vegetables, (2) eating hot cereals, and (3) reducing the intake of white bread, rice and tortillas (see Table 4.4). However, no significant differences were found on (1) eating fruits, (2) eating sugary or cold cereals, and (3) eating whole wheat

breads. Post hoc analyses indicated that consumption of vegetables reported by participants were significantly higher at posttest and follow-up than at pretest. Post hoc analyses also indicated participants reported eating significantly less sugary cereal at follow-up than at pretest. Post hoc analyses in addition indicated that participants reported eating significantly more oatmeal and cream of wheat at posttest and follow-up compared to pretest. And finally, post hoc analyses indicated participants reported eating significantly fewer white breads at follow-up than at pretest or posttest.

Table 4.4

Repeated Measures ANOVA for Carbohydrates

	N	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		F	p	Eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Eat fruits	89	3.52	1.15	3.72	1.04	3.67	1.14	1.46	.23	.01
Eat vegetables	79	3.13 ^{ab}	1.11	3.52 ^a	1.07	3.43 ^b	1.03	5.19	.007	.06
Eat non-sugary cereals	88	2.73	1.17	2.57	1.19	2.61	1.27	.65	.52	.01
Eat sugary cold cereals	81	1.73 ^a	1.27	1.43	1.11	1.43 ^a	1.23	2.45	.09	.03
Eat hot cereal	87	1.91 ^{ab}	1.19	2.21 ^a	1.08	2.23 ^b	1.05	4.05	.02	.05
Whole wheat breads	86	2.64	1.29	2.69	1.18	2.63	1.17	.08	.93	.00
White breads, rice & tortillas	79	2.70 ^b	1.16	2.46 ^c	1.30	2.02 ^{bc}	1.07	10.8	.000	.12

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Proteins. The participants and their families were asked how often they were eating foods from the protein group such as (1) chicken, turkey, or lean beef; (2) soy or soy products; (3) nuts (e.g., almonds, cashews, walnuts); (4) luncheon meats (e.g., salami, hot dogs); (5) higher fat meats (e.g., pork, ham, or bacon); (6) beans or lentils; (7) eggs; and/or (8) egg whites.

The ANOVAs indicated significant differences between pretest, posttest, and follow-up on eating (1) soy or soy products, and (2) nuts (see Table 4.5). However, no

significant differences were found on eating (1) chicken, turkey, and lean beef; (2) luncheon meats; (3) pork; (4) beans; and (5) eggs or egg whites. Post hoc analyses also indicated participants reported eating significantly more soy and soy products at posttest and follow-up than at pretest. Post hoc analyses also indicated that participants reported eating significantly more nuts at posttest and follow-up compared to pretest. Although the ANOVA was not significant, post hoc analyses indicated that consumption of chicken, turkey, or lean beef reported by participants were significantly higher at follow-up from pretest. Similarly, post hoc analyses indicated participants reported eating significantly fewer luncheon meats at follow-up than at pretest or posttest.

Table 4.5

Repeated Measures ANOVA Proteins

	N	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		<i>F</i>	<i>p</i>	Eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Eat chicken, turkey or lean beef	84	2.70 ^b	0.95	2.85	0.83	2.95 ^b	1.07	.84	.433	.01
Eat soy or soy products	84	1.08 ^{ab}	1.35	1.36 ^a	1.20	1.50 ^b	1.3	5.15	.007	.06
Eat nuts (e.g., almonds, cashews, walnuts)	84	1.90 ^b	1.17	2.05 ^c	1.12	2.35 ^{bc}	1.25	7.40	.001	.08
Eat luncheon meats (e.g., salami, hot dogs)	85	1.81 ^b	.92	1.60	.81	1.58 ^b	.93	2.77	.065	.03
Eat pork, ham or bacon	74	1.57	1.01	1.36	.84	1.42	.79	1.57	.21	.02
Eat beans or lentils	74	3.05	1.17	2.89	1.1	3.07	1.13	.84	.43	.01
Eat eggs	74	2.22	.88	2.11	.71	2.19	.68	.56	.57	.01
Eat egg whites	78	1.79	1.10	1.94	1.02	1.96	1.28	.85	.42	.01

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Dairy products. The ANOVAs indicated significant differences between pretest, posttest, and follow-up on eating reduced fat cheese, yogurt, and cottage cheese (see Table 4.6). However, no significant differences were found on (1) eating regular yogurt

and cottage cheese; (2) drinking regular milk; or (3) drinking reduced-fat or fat-free milk. Post hoc analyses indicated participants reported choosing and eating significantly more reduced fat and fat free cheese and yogurt at follow-up as compared to pretest.

Table 4.6

Repeated Measures ANOVA Dairy Products

	N	Pretest		Posttest		Follow-up		F	p	Eta
		M	SD	M	SD	M	SD			
Eat regular cheese, yogurt	78	2.58	1.18	2.33	1.24	2.38	1.18	1.27	.28	.02
Eat reduced/fat-free cheese, yogurt	78	1.80 ^b	1.31	2.10	1.3	2.24 ^b	1.21	3.78	.02	.05
Drink regular milk	65	1.54	1.77	1.34	1.78	1.31	1.63	.63	.53	.01
Drink fat-free or low-fat milk	75	3.45	1.48	3.65	1.37	3.72	1.27	1.29	.28	.02

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Desserts. The participants were asked to report how often they were eating (1) regular ice cream; (2) low-fat or fat-free frozen desserts (e.g., frozen yogurts, sorbet); and (3) cookies, cakes, donuts, and candy. The ANOVAs indicated significant differences between pretest, posttest, and follow-up on eating (1) regular ice cream and (2) cookies, cakes, donuts, and candy (see Table 4.7). However, no significant differences were found on eating low-fat or fat-free frozen desserts. Post hoc analyses indicated participants reported eating significantly less regular ice cream at posttest and follow-up than at pretest. Post hoc analyses also indicated participants reported eating significantly fewer cookies, cakes, donuts, and candies at posttest and follow-up than at pretest.

Table 4.7

Repeated Measures ANOVA Desserts

	N	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		<i>F</i>	<i>p</i>	Eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Eat regular ice cream	73	1.75 ^{ab}	1.13	1.41 ^a	1.08	1.30 ^b	.93	6.75	.002	.09
Eat low-fat or fat free frozen desserts	82	1.30	1.15	1.34	.96	1.40	1.10	.24	.77	.00
Eat cookies, cakes, donuts and candy	79	1.44 ^{ab}	.75	1.14 ^a	.76	1.19 ^b	.66	7.13	.002	.08

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Fats. The participants were asked to report how often they were eating (1) chips; (2) using regular salad dressing, mayonnaise, or cream sauces; and/or (3) using olive oil, vinaigrettes, or fat-free salad dressings. The ANOVAs indicated significant differences between pretest, posttest, and follow-up on eating (1) chips; (2) using regular salad dressing, mayonnaise, or cream sauces; and (3) using olive oil, vinaigrettes, or fat-free salad dressings (see Table 4.8). Post hoc analyses indicated participants reported eating significantly fewer chips at posttest and follow-up than at pretest. Post hoc analyses also indicated that participants reported using less regular salad dressing, mayonnaise, or cream sauces at posttest and follow-up than at pretest. Finally, post hoc analyses indicated that participants reported using more olive oil and fat-free dressings at follow up than at pretest or posttest.

Table 4.8

Repeated Measures ANOVA Fats

	N	Pretest		Posttest		Follow-up		F	p	Eta
		M	SD	M	SD	M	SD			
Eat chips	84	1.63 ^{ab}	.87	1.37 ^a	.66	1.21 ^b	.71	12.4	.000	.13
Use regular salad dressing or mayonnaise	84	1.65 ^{ab}	.90	1.36 ^a	.94	1.34 ^b	.78	5.99	.003	.07
Use olive oil, vinaigrette or fat-free salad dressing	84	1.96 ^b	1.41	2.19 ^c	1.53	2.51 ^{bc}	1.42	7.04	.001	.08

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .01$) in post hoc analyses.

Overall eating habits. Participants were asked how often they and their families were (1) eating fried foods; (2) eating fast foods; (3) eating ready-made frozen dinners; (4) eating 5-6 meals per day; (5) preparing and eating breakfast at home; (6) eating dinner with the entire family; and (7) preparing and eating dinner at home. The ANOVAs indicated significant differences between pretest, posttest, and follow-up on (1) eating fried foods, and (2) eating 5-6 meals per day. However, no significant differences were found on (1) eating fast foods; (2) eating ready-made frozen dinners; (3) preparing and eating breakfast at home; (4) eating dinner with the entire family; and (5) preparing and eating dinner at home (see Table 4.9). Post hoc analyses indicated participants reported eating significantly fewer fried foods at follow-up than at pretest. Post hoc analyses also indicated participants reported they were eating 5-6 meals per day at posttest and follow-up as compared to pretest where they reported eating large portions less often. Although not significant in the ANOVA, the post hoc analyses indicated that participants reported eating significantly fewer fast foods at follow-up than at pretest. The post hocs also indicated that participants reported preparing and eating more breakfasts at home at follow-up than at posttest, and participants reported that they were eating more dinners

with the entire family at follow-up than at pretest.

Table 4.9

Repeated Measures ANOVA Overall Eating Habits

	<i>N</i>	<u>Pretest</u>		<u>Posttest</u>		<u>Follow-up</u>		<i>F</i>	<i>p</i>	Eta
		<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>	<i>M</i>	<i>SD</i>			
Eat fried foods	81	1.62 ^b	.97	1.46	.89	1.33 ^b	.84	3.65	.03	.04
Eat fast food	72	1.28 ^b	.72	1.26	.79	1.11 ^b	.60	2.08	.13	.03
Eat ready-made frozen dinners	73	.59	1.03	.53	.93	.52	.73	.19	.80	.00
Eat 5-6 meals per day	76	1.96 ^{ab}	1.50	2.42 ^a	1.60	2.70 ^b	1.30	7.70	.001	.09
Prepare and eat breakfast at home	83	3.80	1.12	3.67 ^c	1.13	3.93 ^c	1.03	2.02	.14	.02
Eat dinner with the entire family	81	3.46 ^b	1.53	3.65	1.22	3.86 ^b	1.13	2.53	.09	.03
Prepare and eat dinner at home	75	3.57	1.4	3.73	1.17	3.87	1.02	1.86	.17	.03

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Changes in eating habits: Qualitative analyses. To augment the quantitative results, participants in the large group debriefing session during week 12 at each site were asked to share any changes they and their families had made to their eating and nutrition behaviors because of the program. The most common topics about making changes to eating habits and choosing and offering healthier options that came up in the schools are listed in Table 4.9a. As can be seen in the table, participants at all of the schools reported that they were doing one or all of the following: limiting or reducing portion sizes, eating fewer fats and oils, eating more fruits and vegetables, eating more whole grain, and limiting chips. They also reported that they were limiting white rice, offering children fruits such as blueberries as snacks, and making fruit and vegetable smoothies and offering them to their children. In addition, they reported eating less red meat and eating more lean meats such as chicken or turkey. Participants also reported offering children

foods low in fat, eliminating junk food from their diet, and using healthier condiments (e.g., chili and lemon instead of salt).

Participants in four out of five schools (80%) indicated that they were eating more home cooked meals and less takeout and they avoided skipping breakfast. They also reported offering more low-fat milk to their families. In addition, the participants in four out of the five schools (80%) reported that they were drinking less soda, limiting juice consumption by offering milk, and encouraging drinking more water.

Table 4.9a

What are some changes that you and your family have made to your eating and nutrition behaviors because of the program?

Themes at 12-week Debriefing on Changes in Eating and Nutrition Behavior	<u>School Number</u>					% Mentioned Theme
	1	2	3	4	5	
Reduced portion sizes	1	1	1	1	1	100%
More fruits and vegetables; more whole grain; limiting white rice.	1	1	1	1	1	100%
Eat more home cooked meals, less takeout Avoid skipping breakfast; offering more low fat milk	1	1	0	1	1	80%
Less soda consumption, more water, limit juice	1	1	0	0	1	80%

In analyzing the qualitative data, two major themes emerged from the sessions. One theme related to overall eating habits, suggesting that participants were proactively creating an environment that focused on healthy eating habits for the family. Interacting with this theme, a second theme suggested by the responses was that participants were using the knowledge that they had gained in the workshops to make changes in their nutrition and cooking skills. For example, participants spoke of eating more fruits and vegetables as a family. As in the surveys, they reported eating more whole grains and were eliminating sugary cereals. Participants frequently spoke of “choosing” and

“offering” healthier options, all of which indicated they were creating an environment in their homes that emphasized healthy food choices.

During the one-on-one session with participants at the week 12 follow-up, while being weighed and measured, the 91 participants in attendance were each asked “From your perspective, how has this program benefited your children and your family?” The themes of proactively creating an environment that focused on healthy eating habits for the family and using the knowledge they had gained in the workshops to make changes in their nutrition and cooking skills were similar to the group debriefing sessions. They can be summarized as (1) eating more fruits and vegetables; (2) lowering fat intake; (3) lowering portion sizes; and (3) drinking less soda and offering more water and low-fat milk.

Fifty-two out of 91 (57%) participants mentioned eating more fruits and vegetables as a family. Participants also reported eating more whole grains and fiber as suggested by comments such as, “We are choosing more fiber and whole grain options such as whole wheat bread and brown rice, over white.” As in the large group debriefing sessions, participants frequently used words such as “choosing” and “offering,” which further suggested participants were being proactive by using the knowledge gained in the workshops to offer healthier food choices for their families based on what they had learned from class. A comment by one participant captured the overall feelings from participants when she stated, “We have learned so much about nutrition and trying to eat better. I am giving [my family] healthier foods and less junk food. I am offering fruit, salads ... and my children are eating more vegetables and fiber.”

Similar to the quantitative data indicating participants had significantly reduced

their fat intake, 52% of respondents talked about reducing their fat intake and the types of fats they were choosing. Responses from participants suggested they were taking an active role in making healthy food choices and creating a healthier food environment where families were “reading nutrition labels” and “using less high-fat dressing.” As one participant commented, “My husband was a big fan of chips but since attending one class he hasn’t bought any and said they needed to get rid of them at home.” This again suggested the participants had taken the knowledge gained during the workshops and made changes not only in their own eating habits but also in their families’ eating habits.

Not only were participants reporting making better food choices but they were also making changes in their environments through practicing portion control by offering smaller portion sizes. Forty-nine out of 91 respondents (54%) mentioned they were reducing or lowering their portion sizes. Participants were using fewer tortillas and smaller portions of meats. One participant’s comment represented what most reported when she stated, “Controlling the portion size of our foods is an accomplishment for our family but also eliminating chips and soda from our diet. Even the kids are following along and when we go to the supermarket they make better choices.”

Fifty-one participants out of 91 (56%) indicated some type of change in lowering soda consumption and sugars while increasing water and low-fat milk consumption. Participants reported offering more water, and comments suggested they understood the importance of drinking water instead of offering juice or soda. One person stated, “We are drinking more water as a family and make fresh homemade waters by adding lemon, spinach, to the water.” Another commented, “The kids only drink soda on Sunday,” again suggesting that participants understood the importance of limiting soda.

However, responses from some participants suggested there were challenges and barriers they will have to overcome as they work to create a healthier home environment for their families. For example, participants spoke of introducing lower fat dairy products to their families that was met with resistance from members of the family. Some indicated that their children did not like the taste stating, “1% taste like water.” Although there was some creativity by one participant who said, “I am mixing 1% milk with 2%. They don’t notice the difference and they drink it.” This would suggest that making changes in the environment can present some unique challenges for the families.

Table 4.9b

From your perspective, how has this program benefited your children and your family?

Subthemes at 12-week One-on-One session	Number of times theme mentioned		% Mentioned Theme
	Total # of responses	# of time mentioned	
More fruits and vegetables	91	52	57%
Lowering fat intake	91	47	52%
Lowering portion sizes	91	49	54%
Less soda / more water	91	51	56%

Physical activity: Quantitative analyses. Three questions on the survey asked participants how often they were (1) walking 30 minutes or more per day; (2) engaging in aerobic activity (e.g., jogging, biking, or swimming); and/or (3) being involved in a group physical activity (e.g., group sports, soccer, basketball, and baseball.) The ANOVAs indicated significant differences between pretest, posttest, and follow-up on all three items (see Table 4.10) Post hoc analyses indicated that participants reported walking significantly more per day at follow-up than at pretest. Post hoc analyses also indicated participants reported engaging in aerobic activities significantly more at posttest and follow-up than at pretest. Finally, post hoc analyses indicated participants reported

involvement in group activities significantly more at follow-up than at pretest or posttest.

Table 4.10

Repeated Measures ANOVA Physical Activity Behavior Change

	N	Pretest		Posttest		Follow-up		F	p	Eta
		M	SD	M	SD	M	SD			
Walk for 30 minutes or more per day	82	2.85 ^b	1.56	3.10	1.23	3.30 ^b	1.16	3.96	.025	.05
Engage in aerobic activity (e.g., jogging, biking)	78	2.10 ^{ab}	1.61	2.51 ^a	1.44	2.55 ^b	1.47	4.23	.017	.05
Involved in group activity (e.g., organized sports)	77	.57 ^b	1.02	.81	1.17	1.08 ^b	1.37	6.37	.002	.08

Same superscripts (e.g., ^{aa} or ^{bb} or ^{cc}) indicate significant differences ($p < .05$) in post hoc analyses.

Physical activity: Qualitative analyses. The quantitative results were further confirmed during the week 12 group debriefing when the participants were asked, “What are some changes that you and your family have made to your physical activity behaviors because of the program?” As can be seen in Table 4.10a, the most common theme that arose in the debriefing sessions in all five schools regarding making changes to physical activity were (1) more walking as a family, (2) involving children in more sports, and (3) participating in group activities and engaging in a variety of physical activities such as biking and dancing.

Participants in all five schools (100%) indicated that they were walking more, doing Zumba, bike riding, dancing, and involving their children in more sports and activities. In addition, participants in four out of five schools (80%) indicated that they were trying to get more physically active by avoiding public transportation and driving, and (if they did drive) parking far from destination, and using stairs instead of the elevator.

Table 4.10a

What are some changes that you and your family have made to your physical activity behaviors because of the program?

Themes at 12-week Debriefing on Changes in Physical Activity	School Number					% Mentioned Theme
	1	2	3	4	5	
Walking and dancing more	1	1	1	1	1	100%
Involving children in group physical activities	1	1	1	1	1	100%
More bike riding;	1	1	1	1	1	100%
More outdoor physical activities	1	1	0	1	1	80%

Participants' reporting of changes in physical activity was further confirmed when the participants were asked one-on-one questions during the week 12 follow up session. Sixty-one out of 91 respondents (67%) reported that they were being more physically active. Participants' comments suggested they recognized the importance of physical activity and involving their families in many different types of activities. Again, parents were taking a proactive role in their environment, suggesting they were using the knowledge they had gained in their classes. They reported taking the children often to the park and walking more often as a family. They spoke of parking their cars at the end of the parking lot and taking stairs instead of the elevator to increase activity. One participant's statement summed up the changes in physical activity reported by many others when she stated, "My family and I walk more in the evenings now and we are doing more exercise ... they ride their bikes ... we dance at home ... we are going to the park and playing baseball and soccer."

Research Question 4

What comments, observations, and suggestions do participants of the program have to guide any changes to the program?

Research question four only included qualitative data from parents' responses during a large group debriefing session during week 4 in which they were asked, "How can this program be changed or improved to be more helpful to you? Which parts of the program were most useful? Which parts of the program were least useful?" Overall, the data suggested participants were requesting strategies that would increase their knowledge and assist them in applying what they learned to continue to make changes in their lifestyle and environment.

With regard to how the program could be changed or improved, participants in all five of the schools stated that they would like longer Zumba and exercise classes. Some comments by participants were, "the classes are only 20-30 minutes" and "longer yoga, Zumba or dance classes will be great." Participants in 4 out of 5 schools mentioned they would like more recipes. One participant commented, "I would like different recipes for quinoa," while another said "more recipes to make with my children." In addition, participants in all five schools said that they would like more overall nutrition and cooking classes. One participant was surprised that the classes would not be ongoing stating, "You mean this is not each week? We can benefit from a nutrition class each week." Another agreed, "More than four classes will be helpful." In addition, participants in three out of five schools asked for classes on diabetes, cardiovascular diseases, cholesterol, food allergies, nutrition through lifespan, and high blood pressure. One participant noted, "We would like to learn more about diabetes and taking care of our heart." Another participant said, "I want to know how to control my blood pressure." Another comment from a participant was, "we want to include children in the classes." The participants liked the lesson plans and handouts from each class, commenting, "I

wish we had additional time and more information on food labels.” Participants in one school asked for one-on-one counseling sessions with follow-ups by a registered dietitian, stating, “I would like to learn how to interpret the body fat percent and work with an RD.” All of these comments suggested participants were interested in continuing to add to their knowledge base regarding nutrition, cooking, and physical activity, which would result in a more healthy lifestyle for themselves and their families.

In terms of usefulness of the program, participants in all five schools expressed that they found the program to be very useful. They indicated that learning how to read food labels and portion sizes was the most useful. One participant stated, “Learning about the food label has helped us look for different fats in the foods and serving sizes.” They expressed thankfulness at learning about “portion control” and “serving sizes” for protein and other food groups. They also were appreciative about (1) “learning sources of specific vitamins and minerals like calcium and vitamin D,” (2) “exercising to lower diseases,” (3) “using the recipes as a family,” (4) “learning about Myplate as a guide for portion control,” and (5) “Spanish speaking instructor and resources.” A comment by one participant seemed to reflect the feelings of the many participants when she stated,

I really love this program and I wish you could have it more often and we can have you guys around and we could learn more stuff because I have learned a lot from you ... you gave us handouts ... booklets ... recipes. My kids liked them and we use the recipes.

The program participants were then asked the third question, “Which parts of the program were least useful?” Participants in all five schools said that everything was useful. A participant from one school indicated that she would like more explanation of

the material in a simpler format. Most parents in this particular debriefing session however, disagreed. As stated by a parent,

We really appreciate you giving us the time to show us, the parents and community, how to eat healthy and how to teach our kids to eat healthy and be better so that we could have a better health. Not only dieting but better heart and good healthy body ... I really liked this program and you guys did a good job.

Many participants expressed appreciation for the classes and indicated how it has helped their families make healthier choices. One participants stated,

This program has benefited me. I don't want my kids to go through what I went through because I was always punked. I was always being called names because of my weight. People are mean now and kids are cruel. This is a good program for all of us to get our kids together and start eating healthy because I do see overweight kids and it's pretty sad because these children are more overweight than they were in the 80s.

This reflection upon participants' own issues with childhood weight problems and how they saw the benefits of the workshops as a way to educate their own children early on about living a healthy lifestyle was expressed by a number of participants, with one participant commenting,

I'm really enjoying spending time with my children and being able to eat our meals as a family. It has benefited me and my children in many ways. It's a really good program. I like it because I've had weight problems since I was a little girl and people always made fun of me and I like this program because it helps my kids too. I mean to take care of themselves, to eat healthy and do a lot

of things like exercise and stuff. I mean I do it more for them than for myself because I don't want them to have weight problems and go through what I went through with people.

A participant with tears in her eye stated, "So, that is why I'm taking this class so that my kids could learn how to take care of themselves and [to take care of their] weight and to exercise and how to eat healthy."

These statements indicated parents felt the program was beneficial to them and their families. They reported that the program was providing them with tools to spend more time with their children, cook with their children, and make healthier lifestyle changes. They reported wanting more nutrition and physical activity classes and additional recipes. They did not report any part of the program as not useful. Overall data suggested participants were requesting strategies that would increase their knowledge and assist them in applying what they learned to continue to make changes in their lifestyle and environment.

Summary

This study was conducted to evaluate how the "A Taste of Good Health" school-based parent education program affected healthful behavior in parent participants and their families in a large urban school district. The results for research question one indicated that parents in all five schools significantly increased their nutrition, cooking, and physical activity knowledge from pretest to posttest and follow-up. In regards to question number two, parents in all five schools decreased their body weight and BMI from pretest to posttest. Research question three examined participant reports of cooking, eating, and physical activity behaviors. Regarding cooking techniques, parents and their

families reported grilling and steaming more, and frying less. In regards to eating behavior, participants reported they and their families were eating more fruits and vegetables, fewer sugary cereals, more oatmeal / cream and wheat, and less white bread or rice. Although participants reported they and their families were eating more low-fat meats, soy products, and nuts, there were no significant differences from pretest to posttest on the consumption of beans, lentils, and eggs. They reported consuming more reduced-fat cheese, yogurt, and cottage cheese. In regards to desserts, they were eating less regular ice cream, as well as less candy and desserts. They were using less fat, saturated fat, creamy sauces, and mayonnaise while using more olive oil. Participants were drinking more water and drinking less soda. They were buying fewer chips and offering healthier snacks to their families. The participants had significantly decreased their fat intake.

In regards to changes in physical activity, they were walking more with their families and for longer periods of time. They were participating in more group activities and organized sports.

In regards to program changes, participants indicated that they would like more nutrition classes, longer Zumba classes, more recipes, and additional information on different chronic diseases. They thought everything was useful and did not indicate the need for any changes. The quantitative data along with the qualitative data collected at the week 12 debriefing and one-on-one sessions suggested that participants had used the knowledge gained in the classes to create healthier home environments for their children and families. A discussion of these results and their implications for policy and practice are presented in Chapter 5.

CHAPTER 5

DISCUSSION AND CONCLUSIONS

This chapter interprets and discusses the results in light of the study's research questions, and conceptual framework. First, a summary of the study that includes a brief overview of the problem, purpose, research questions, methodology, and major findings is provided. This is followed by an interpretation and analysis of the findings and their relationship to the literature and conceptual framework that guided this study. The chapter concludes with implications for policy and practice and recommendations for future research.

Summary of Study

The dramatic increase in the prevalence of childhood obesity, particularly in Latino populations, as well as the serious consequences of childhood obesity including the health and financial burdens that transpire as a result, have prompted the need for broad interventions in order to address this public health issue (American Academy of Pediatrics, 2003; Cole et al., 2006; Deckelbaum & Williams, 2001; Foster et al., 2007; Ogden & Carroll, 2010). Given the pandemic proportions of childhood obesity (American Academy of Pediatrics, 2003; Cole et al., 2006; Foster et al., 2007), and the research calling for the systematic evaluation of school/community partnerships that are focused on family-based interventions, there is a critical need to evaluate programs that can be used in schools and districts implementing school/community partnership interventions with a focus on parent education.

The purpose of this study was to evaluate the effectiveness of “A Taste of Good Health,” a school-based parent education program designed to affect healthful behavior in parent participants and their families in five schools with a high percentage of Latino families in the LAUSD. The intervention consisted of a 4-week program, meeting once a week for 2½ hours at each meeting, for a total of 10 hours of instruction. Classes were taught by a bilingual Registered Dietitian and focused on healthy eating and cooking techniques. Although verbal feedback from previous participants has indicated this program has been successful in increasing nutrition knowledge, no systematic follow-up evaluation to determine if participants and their families evidenced changes in their nutrition, cooking, and physical activity knowledge and behavior both during and three months after the completion of the program had been previously completed. It was hypothesized that providing an intervention that focused on educating parents on nutrition, physical activity, and cooking would result in the adoption of a more healthy lifestyle by workshop participants.

In order to evaluate how “A Taste of Good Health” classes affect healthful behavior in parent participants and their families, it was hypothesized that providing an intervention which focused on educating parents on nutrition, physical activity, and cooking would result in the adoption of a healthier lifestyle.

The study addressed the following four research questions:

1. Are there significant differences between pretest, posttest, and follow-up on participants’ knowledge regarding nutrition, cooking, and physical activity?
2. Are there significant differences between pretest, posttest, and follow-up on body weight, body mass index (BMI), and percent body fat of the participants?

3. Are there significant differences between pretest, posttest, and follow-up on cooking, eating habits, and physical activity of the participants and their families?
4. What comments, observations, and suggestions do participants of the program have to guide any changes to the program?

To address the research questions, this dissertation employed mixed-methods (Hanson et al., 2005) and pre-experimental survey design (i.e., pretest, posttest, follow-up design without a comparison/control group) in evaluating the effectiveness of the parent workshops. In order to measure the effectiveness of the intervention in changing participants' knowledge and behavior, quantitative data were collected through a survey administered at week 0 (pretest), week 4 (posttest), and week 12 (follow-up). There were a total of 202 participants who consented to participate in the research study. Of the 202 participants who completed the pretest survey, 149 completed the posttest survey, and 108 participants completed the follow-up survey. All survey data were coded and then entered into an Excel spreadsheet. Repeated measures analysis of variance (ANOVAs) were used to analyze the significant differences between pretest, posttest, and follow-up. The analyses were run in Statistical Package for the Social Sciences (SPSS) 20.0 on a Macintosh computer.

In order to augment quantitative evaluation data, a debriefing session and one-on-one questioning of participants was completed at the week 12 follow-up to determine what changes, if any, participants had made based on the workshop series. In addition, the researcher gathered participants' views of the usefulness of the program through debriefing sessions with participants at each of the sites during the week 4 posttest sessions. Qualitative data were coded and themes generated based on a conceptual

framework. The conceptual framework that guided this study incorporates components of Epstein's School, Family, and Community Partnership Model (Epstein, 2011), and Golan and Weizman's (2001) conceptual model of the familial approach to the treatment of childhood obesity.

Summary of Major Findings

Overall findings suggest that participants used the knowledge gained in the classes to create healthier home environments for their children and families. Using both quantitative and qualitative measures, major findings indicated participants in all five schools reported: (1) significantly increasing their nutrition, cooking, and physical activity knowledge from pretest to posttest and follow-up; (2) significantly decreasing their body weight and BMI from pretest to posttest; and (3) making significant changes in cooking, eating, and physical activity behaviors.

Regarding cooking techniques, parents and their families reported grilling more, steaming more, and frying less. In regards to eating behavior, participants reported that both they and their families were eating more fruits and vegetables, less white bread or sugary cereals and more whole grain cereals. They also reported eating more low-fat meats, soy products, nuts, more reduced-fat cheeses, less regular ice cream, less candy and fewer desserts. They reported using less fat, saturated fat, creamy sauces, and mayonnaise while using more olive oil. The participants reported significantly decreasing their fat and sugar intake while increasing consumption of drinking water and healthier snacks. In regards to changes in physical activity, they were walking more as a families and for longer periods of time. They were participating in more group activities

and organized sports. Finally, participants indicated they found the classes useful and were desirous of more classes.

Discussion

Using concepts from the Golan and Weizman (2001) conceptual model of the familial approach to the treatment of childhood obesity and Epstein's (2011) school, family, and community partnership model, this study employed a logic model entitled "A Taste of Good Health" (See Figure 1.1) as a framework for evaluating the parent education intervention. The model was a way to visually represent the various components of the project organized around the ideas presented in the conceptual framework outlined in Chapter 1.

The "Taste of Good Health" Logic Model process was utilized by the researcher to evaluate the effectiveness of the school-based parent workshops in increasing nutrition, cooking and physical activity knowledge, changing behavior in these areas, and measuring any changes in participants' weight and BMI. The model described the process and linkages between the program resources, activities, outputs, participants, and short-term and intermediate-term outcomes related to educating participants about ways to create a healthful home environment with the long-term outcome of curbing childhood obesity. The discussion of this study will be organized around how this school-based parent workshop series affected changes in knowledge, behavior, and the family environment of participants.

Changes in Knowledge

Both qualitative and quantitative data reported by participants indicate that parents increased their knowledge of cooking techniques, proper nutrition habits, and

physical activities that would lead to a healthier lifestyle. These results are consistent with the goals of the program and the short-term outcomes from the “Taste of Good Health” Logic Model to increase participants’ nutrition, cooking, and physical activity knowledge from pretest to posttest and follow-up. The quantitative data suggested a significant increase in the parents’ knowledge from pretest to posttest, and posttest to follow-up. It is apparent from the qualitative data, including the responses of parents regarding the behavioral changes they had made, that they had increased their cooking, eating, and physical activity knowledge. They continued to learn as they were reading more labels and using different cooking techniques, while including family members in cooking and finding different ways to get physically active as a family.

These findings were similar to the findings in a study completed by Hopper et al. (1996), which clearly showed that as parents increased their nutritional knowledge, short-term dietary changes in their children and their families followed. The findings are also consistent with literature from the American Dietetic Association Foundation (ADAF, n.d.) that suggests as parents increased their knowledge in nutrition, cooking, and physical activity, they made changes in their families’ environment. Research has reinforced the need to increase the knowledge base of parents in order to effect the change that is necessary in the family model (Golan & Weizman, 2001). The parents, through increased knowledge, can learn and appreciate the importance of a non-diet approach (Savoye et al., 2005). The findings from the present study confirmed that parents had increased their knowledge and they were using this knowledge to make changes in their families’ eating and physical activity.

The findings showed that increases in nutrition and physical activity knowledge were significantly higher at follow up than pretest and even posttest. This indicates that the participants not only increased their knowledge during the program, but they also continued learning and practicing after the completion of the program. There could be two explanations for this result. One explanation is that parents were extremely motivated and confident, and they continued to learn and practice. Second, it could be that they knew that they were coming back in three months, and that kept them motivated to learn and make changes to their lifestyles in the short term. This leads to the conclusion that many families need long-term support, resources, and follow-up to ensure they are successful in making healthy behavior changes.

Changes in Behavior

Changes in behavior led to changes in weight and BMI, cooking techniques, nutrition, and physical activity. Changes in weight and BMI were consistent with the goals of the program and intermediate-term outcomes of the “A Taste of Good Health” Logic Model, which was to help participants maintain or lower their BMI. Changes in cooking, eating, and physical activity behaviors were consistent with the goals of the program and short-term outcomes of the “A Taste of Good Health” Logic Model to cook healthier and provide healthier meals for their families.

With regard to changes in weight and BMI, the ANOVAs indicated significant differences between pretest, posttest, and follow-up on weight and BMI, but no significant differences were found on percent body fat (see Table 4.2). There are two possible explanations for not seeing a change in percent body fat. First, the percent body fat machine has specific instructions to not have participant eat or drink at least one hour

prior to taking the measurements, thus the researcher informed participants during the first session in schools while reviewing the consent forms. However, it is possible that the participants forgot and had consumed something within that period of time. Second, it is possible that parents decreased their percent body fat, but not enough for the analysis to show a significant change.

Quantitative data indicated that parents weighed less, and BMI was lower at posttest and follow-up than at pretest. Specifically, the program teaches the participants how to make better food, cooking and physical activity choices. The focus of this program was not specific to weight loss, but it appears the parents knew the consequences related to being overweight and were making behavioral changes. During the debriefing session, several participants spoke about the importance of the program while recognizing how they had suffered from being overweight, and how they did not want their children to go through a similar ordeal. This would indicate the participants had gained knowledge and appeared to be using the knowledge to make healthier choices for themselves and their families.

The study findings were consistent with the literature from the Latino Coalition for a Healthy California (LCHC, 2006), that “particularly important for Latinos are prevention strategies that strengthen families and communities and emphasize broad concepts of social and physical health rather than focusing on BMI” (p. 6). This parents in the program were able to accomplish increased knowledge and changing nutrition, cooking, and physical activity behaviors in parents, which in turn increased their skills and ability to make changes in their home environment.

Research indicated that another consequence of childhood obesity is that it leads to adult obesity. Singh et al. (2008) systematically reviewed 25 studies that tracked childhood obesity leading into obesity during adulthood. All 25 studies reported that childhood obesity increased the risk of becoming overweight and/or obese adults. The feedback from the participants of the present study was consistent with this research. Specifically, parents were worried that their children would suffer in the future, similar to how they had suffered with their weight problems in the past, and thus they felt it was important to incorporate strategies from the workshops in order to ensure their children and families engaged in a healthier lifestyle.

In regards to changes in cooking, both qualitative and quantitative data indicated that parents engaged in less cooking with butter or margarine, less frying of foods, and more grilling, baking, and reading food labels for ingredients. Important in this study was that these families were provided recipes that allowed them to cook the foods consistent with their culture, using healthier cooking techniques. The findings were consistent with ADAF (n.d.) and Evans et al. (2011), which found that intervention curriculum should include culturally appropriate nutrition education and healthy cooking tips or ideas for parents and families. It should also include culturally sensitive materials, information, and recipes to be effective to the target audience. The present study showed that when parents were provided with interventions that included hands-on cooking techniques and resources, they were able to make changes related to cooking.

The quantitative data, however, did not suggest a significant decrease in cooking with oils, removing fat before cooking, or an increase in cooking together as a family. However, qualitative data from debriefings and one-on-one questioning indicated that

participants understood healthy cooking techniques and made attempts to decrease the use of oils while including their families in shopping and cooking. However, the retrospective survey analyses does not show the decrease. Three explanations are possible. First, in one-on-one interviews, the parents may have been giving more socially desirable responses (e.g., cooking healthier). Second, it is possible the survey did not give an accurate enough measure to show decreases unless a family substantially decreased intake. Third, it is possible that parents started cooking healthier as a family, removing fat from the meats while using fewer oils, but not enough for the survey to show this change.

Regarding changes in eating habits, both qualitative and quantitative data indicated that parents engaged in less intake of white bread, rice, tortillas, ice cream, cookies, candy, chips, and fried foods, while engaging in more intake of vegetables, oatmeal, cream of wheat, soy products, nuts, reduced-fat cheese, yogurt, low-fat frozen yogurt, low-fat dressings, and healthy smaller meals. Specifically, the program taught the importance of eating more fruits, vegetables, and whole grains, as well as eating fewer fried foods, sugary foods, and refined foods. The quantitative data did not suggest a significant decrease in consumption of sugary cereals, luncheon meats, fast foods, and frozen dinners, or a significant increase in drinking reduced-fat or fat-free milk or eating low-fat frozen desserts. However, at the follow-up debriefing and one-on-one sessions, the parents said they were decreasing the intake of sugary cereals, and they were offering more reduced-fat and fat-free milk. It appears the parents knew the healthful behavior, and they made attempts to decrease use of sugars, fats, white breads, and rice, but the retrospective survey analyses does not show the decrease. As with changes in cooking,

there are three possible explanations. First, in one-on-one interviews the parents may be giving more socially desirable responses (e.g., eating more healthy). Second, it is possible the survey does not give an accurate enough measure to show decreases unless a family substantially decreases intake. For example, the mean overall for eating fast foods and frozen dinners was not high at pretest. The participants in this study were not eating fast foods and luncheon meats as much, and they were not using frozen dinners. Third, as with changes in cooking, it is possible that parents started eating healthier, but not enough for the survey to show healthful behaviors.

The quantitative data did not suggest a significant increase in eating fruits, whole grains, beans, eggs, preparing and eating breakfast or dinner at home, and eating dinner with the entire family. The follow-up debriefing and one-on-one sessions, however, showed parents indicated that they were increasing their consumption of fruits and whole grain products. They also indicated that they were preparing and eating more meals together as a family. Three explanations are possible. First, similar to cooking and eating changes, in one-on-one interviews the parents may be giving more socially desirable responses (e.g., eating more healthy). Second, it is possible the survey does not give an accurate enough measure to show increases unless a family substantially increases intake. For example, the participants were already consuming high amounts of fruits and beans, therefore the change was not significant. Third, similar to eating and cooking, it is possible that parents started eating healthier, but not enough for the survey to show healthful behaviors.

In regards to making changes to physical activity, findings were similar to several studies (Davison et al., 2003; Katz et al., 2011; McGarvey et al., 2004) that examined

changing physical activity behavior, and showed that parent-focused interventions have been more effective in making physical activity behavior changes in both parents and their families. Both qualitative and quantitative data from the present study indicated that parents and their families engaged in more physical activity at posttest and follow-up. The program in the present study specifically taught participants ways to increase their overall daily activity, provides resources, and encourages participants to get active with their children and their families.

It appears that parents know the healthful behavior regarding physical activity, and have made attempts to increase the physical activity level of their families. This was confirmed through the survey, the debriefing sessions, and one-on-one questioning of each participant. It was apparent that the program was very effective in encouraging an increase in the overall physical activity of the participants. Participants were using the knowledge gained in the classes to make behavioral and environmental changes in their and their families' lifestyles.

Changes in Environment

Epstein (2009) proposed that successful parent education programs require the involvement and partnership between the family, community, and school. For the present study, it was hypothesized that the partnership developed between participants, LAUSD, Northridge Hospital, and the California State University Northridge Dietetic Internship Program through the school-based parent nutrition education program allowed the parents to be involved and take a leadership role in successfully implementing a healthier lifestyle for themselves and their families. Findings suggested this collaboration and partnership allowed the parents to obtain knowledge and practice in the area of nutrition,

cooking, and physical activity, and to be more involved in creating environments which fostered their families' health and well-being.

Similar to findings from Golan and Weizman (2001), findings from this study indicated that parents were able to make changes in their families' environment. They were incorporating healthy cooking techniques such as grilling and baking. They were becoming more physically active by walking more as families and encouraging their children to participate in more group sports. They were offering more fruits and vegetables while reducing portion sizes.

Findings from the study, similar to findings from Evans et al. (2011) suggested that parent-focused healthy lifestyle workshops offered in partnership with schools are a great way to increase parents' knowledge in nutrition, cooking, and physical activity, and a great way to help parents maintain a healthy weight. In addition, the majority of families represented in this study were Latino and low-income. As indicated by Alexander et al. (2007), there exists a lack of knowledge, understanding, and resources specific to the this population, and specific to the causes of obesity in this population which leads to medical, psychological, and school performance issues. What is significant in this study is that after providing participants with education and skills, they reported increasing their knowledge in nutrition, cooking, and physical activity and making changes in their home environments by making healthier choices for their families in cooking, eating, and physical activity behaviors.

Moreover, when asked how the program could be improved, participants asked for more information on chronic diseases and longer and more frequent classes, which suggests that participants really appreciated and valued the program and understood its

importance and believe it addressed their needs. Findings also indicated how motivated they were to learn. These parents showed a sincere interest in learning how to create a more healthy home environment for themselves and their families. Participants requested strategies that would continue to increase their knowledge and assist them in applying what they learned in continuing to make changes in their lifestyle and environment. It is apparent that participants found the program very valuable. They reflected upon their own issues with childhood weight problems and how they saw the benefits of the workshops as a way to educate their own children early on about living a healthy lifestyle.

The intermediate-term outcomes outlined in the logic model were for parents to act as role models and identify actions to take to make healthier family choices and maintain or lower BMI. As indicated by the findings, participants had maintained their weight three months after intervention. In addition, parents were starting to gain confidence in making the changes in their home environments indicative of a healthy lifestyle. As their confidence grew, data suggested these parents were acting as role models for their families. However, these types of environmental changes take time. Several studies (Blom-Hoffman et al., 2008; Davison et al., 2003; Gross et al., 2010; Rudolph, 2009) explained that when parents act as role models in changing their own nutrition and physical activity behavior, there is logistical support for the children. Overall data suggested that parents reported changing the way they were managing food at home. Parents were trying to make changes at home in order to set a good example for their children. During the first four weeks, they had learned how to cook healthier, how to read labels, how to eat healthier, and how to become more physically active. At the

week 12 follow-up, they continued to report implementing these environmental changes. Follow-up was very important. It indicated to the researcher that participants really used their knowledge to cook healthier, and they really implemented and used what they learned from class in physical activity and nutrition and in creating a healthy environment for themselves and their families.

Implications for Policy and Practice

The findings from this study suggest several implications for practice and policy. There were five major implications for practice that surfaced. First, this was a 4 week program designed to take place during school hours. Therefore, the workshops catered to participants who were not working and it was only four sessions. An implication for practice is to consider designing an alternative program for families who are working during the day, which may involve afterschool, evening, or weekend classes. The present intervention study was only four weeks in length. Findings suggested that parents wanted more and longer sessions. The study found families making healthy lifestyle changes, but the question is how the changes can be sustained. It would be important to examine how to set up a longer series, or a continuous program.

Findings showed that short-term follow-ups were critical. A second implication for practice concerns sustainability. To sustain participants' growth, systematic and continuous follow-ups should be considered. Similar to Spruijt-Metz (2011), there is a need for large-scale, high-dose, and long-term interventions, taking into account the complex nature of childhood obesity. A longer follow-up (e.g., one year) to assess and evaluate effectiveness is suggested.

A third implication for practice concerns the workshop model, which focused on educating participants and actively engaging them in practicing the skills they were learning. Wechsler et al. (2004) also found that curricula was more likely to be effective in improving health behaviors when it was focused on skills needed to adopt healthy behaviors and provided ample opportunities to practice those skills. The participants in this study had three months to practice the cooking, eating, and physical activity skills taught during this class, and the results at follow-up clearly showed changes that participants had made in cooking, eating, and physical activities.

Fourth, the current study used both formative and summative evaluations to examine the effectiveness of this program. These evaluations included quantitative data collected from surveys given throughout the intervention as well as qualitative data where participants were asked to talk about how the program was influencing their ability to create a more healthy lifestyle for themselves and their families. These methods of evaluation both during and upon completion of the program are important to measure program effectiveness, inform future planning, and inform practice. As a part of this study, the researcher aimed to obtain participants' feedback to improve the program. As found in this study, it is important to tailor programs to the unique needs of the participants. This can only be done by soliciting feedback throughout the program, not just at the conclusion.

Fifth, in the current program participants met weekly. The program was activity-based, and participants had opportunities to talk to and listen to each other. They brought in foods and recipes to share. It is important to provide structured opportunities after the conclusion of such workshops for participants to continue to support each other as they

work to make changes in their behavior and ultimately in their home environments. Training and providing the opportunity for parents to teach classes, and perhaps the development of support groups, would be some possible ways to sustain the support and learning of participants.

These implications are important and relevant to policy. As suggested by the Latino Coalition for a Healthy California (LCHC, 2006), nutrition education for children and their families is needed, as well as stronger policies to ensure healthy school nutrition and physical activity environments. Findings from this study provided evidence that a partnership between schools, community organizations, and the university can be successful in developing such programs. These types of collaborations and partnerships should be encouraged. Engaging the family, community, and schools is key for successful programs.

Although this study only looked at the parent component, the involvement of parents is only one piece towards a more comprehensive and systematic program that involves parents, children, schools, and the community that will result in greater and more sustainable programs. Based on the results of this study, there are four implications for policy. First, there needs to be a concerted effort to foster relationships and create ongoing partnerships that engage the community, families, and schools in creating effective and ongoing childhood obesity intervention programs. Once these partnerships are created, the design of these intervention programs should be a collaborative effort between schools, families, and community agencies in order to maximize the use of human and fiscal resources. A third implication for policy involves the systematic implementation of these intervention programs. This requires community agencies and

schools to work together to ensure that families are made aware of the program offerings and the benefits of participation. Providing ongoing support of such programs will create sustainability. Finally, as essential component of these programs needs to be systematic formative and summative evaluations that can then be reviewed collaboratively in order to inform future program planning.

Recommendations for Future Research

This study examined the effectiveness of a parent intervention to make healthier lifestyle changes. There are five suggestions for future research.

1. This study suggested significant changes at three months. Studies should conduct follow-ups at six months and again at one year to analyze whether changes are sustained over longer periods of time. A further suggestion is to conduct one year or longer follow-up to determine long-term effects as described in the Conceptual Framework of this study.
2. This study obtained parent-reported data. For future research, it is suggested to gather data from children in addition to parents, to conduct observational studies of parents and their families in their home environment, and to collect observational studies of students in the school environment to see how changes are being incorporated.
3. Wechsler et al. (2004) suggested that curriculum should focus on helping participants overcome barriers by providing them with coping strategies in order to adopt healthy behaviors. This study and program did not address barriers to adopting a healthy lifestyle. Future research on identifying barriers and providing solutions to participants to overcome these barriers is suggested.

4. This study did not include children nor did it measure student achievement. For the future, it would be important to analyze student achievement with long-term research. Previous researchers (Ball et al., 2004; Datar & Sturm, 2006; Datar et al., 2004; Hunt, 2008; Schwartz & Puhl, 2003) have indicated that childhood obesity has an impact on achievement. Long-term studies, following the children of the families who are making healthy changes in their lifestyles, will help understand the effects on student achievement.
5. This study only analyzed the parent component. Future research can focus on how school districts are implementing required wellness policies to curb childhood obesity.

Concluding Statement

The purpose of this study was to evaluate the effectiveness of “A Taste of Good Health,” a school-based parent education program designed to affect healthful behavior in parent participants and their families in a large urban school district. The dramatic increase in the prevalence and pandemic of childhood obesity, as well as the serious consequences including the health and financial burdens that transpire as a result, have prompted the need for broad interventions in order to address this public health issue. The goal of this study was to increase nutrition, cooking, and physical activity knowledge, modify nutrition and physical activity behaviors, and ultimately counter childhood obesity and diabetes in the San Fernando Valley. The goal of increasing knowledge and changing behavior was overall met through this study.

Ultimately, to counter childhood obesity and diabetes, there need to be longer interventions, more support and resources for families, and long-term programs and

studies. This study was consistent with other studies confirming that parents play an important role in developing healthy lifestyles and modeling healthy behaviors for their families. Having a partnership with school, family, and community is critical given this serious health problem, if we hope to ultimately curb childhood obesity. We need to continue to provide systematic evaluation of these programs and involve schools, parents, school personnel, and the community.

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APPENDIX A

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE PARENTAL INFORMED CONSENT FORM

Project Title: A Taste of Good Health: School-based Parent and Family Workshops to Reduce Childhood Obesity

Introduction: The “Taste of Good Health” project, conducted by Annette Besnilian, MPH, RD, CLE, is designed to provide lifestyles education classes in schools to educate parent participants about healthful eating, cooking, and physical activity behaviors as means of encouraging families to prevent and minimize the dangers associated with childhood obesity. Changes in cooking, eating, and physical activity habits, knowledge of nutrition, cooking, and physical activity, and body weight, body mass index (BMI), and percent body fat of participants will be collected both at the beginning of the program, after completion of the program and during a follow up session. All measurements will be conducted privately between each individual participants and the researcher and will be kept confidential.

Description of Project: You can participate in the program even if you choose not to participate in the evaluation. If you agree to participate in the evaluation, you will be asked to complete a survey at the beginning of the first class which will include some questions on nutrition, physical activity and cooking. Your weight and percent body fat will be measured at the beginning, after four weeks and during the follow up session. You will be asked to complete the same survey and participate in a debriefing session during the posttest (week 4) and again during the follow up which will be week 12. The pretest will occur during the week one of the program, prior to the start of first class and will take 15-20 minutes. The posttest will occur at the end of the class session of week four of classes and will be approximately 15-30 minutes in length. The follow up evaluation, which is considered to be the fifth class meeting, will occur on the twelfth week. Follow up will take approximately 30-45 minutes. There will be two note takers to take note of your answers during weeks 4 and 12. All participants are invited to respond; however, you do not have to if you choose not to.

All evaluations will take place in the study schools in the parent center.

Subject Information: Parents whose children attend one of five pre-selected public elementary schools in LAUSD taking the parent education workshop called “A taste of Good Health”.

Confidentiality & Final Disposition of Data: Confidentiality of all subject information will be maintained by the researcher. Records will be stored on the researcher’s computer and will be secured by a username and password. No other persons will have access to this information. pseudonyms will be used. The cumulative results of this study will be published, but the names or identity of subjects will not be made public.

Benefit of Participation: You will receive vital nutrition, cooking, and physical activity education that includes cooking and taste-testing components. All educational materials and food items will be provided to you. Additionally, participants who agree to participate in the posttest and follow-up survey at weeks four and twelve are eligible to receive gift cards as compensation for their participation.

Risks/Concerns: There are no potential risks to subjects in this study. The present study is voluntary and the information obtained will not be revealed to anyone outside of the researcher. You may elect not to answer a question, if it makes you uncomfortable.

Voluntary Participation: Participation is completely voluntary and you may decline to participate or withdraw from the study at any time without jeopardy. Likewise, the researcher may cancel this study at

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
PARENTAL INFORMED CONSENT FORM

Project Title: A Taste of Good Health: School-based Parent and Family Workshops to Reduce Childhood Obesity

Introduction: The “Taste of Good Health” project, conducted by Annette Besnilian, MPH, RD, CLE, is designed to provide lifestyles education classes in schools to educate parent participants about healthful eating, cooking, and physical activity behaviors as means of encouraging families to prevent and minimize the dangers associated with childhood obesity. Changes in cooking, eating, and physical activity habits, knowledge of nutrition, cooking, and physical activity, and body weight, body mass index (BMI), and percent body fat of participants will be collected both at the beginning of the program, after completion of the program and during a follow up session. All measurements will be conducted privately between each individual participants and the researcher and will be kept confidential.

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Risks/Concerns: There are no potential risks to subjects in this study. The present study is voluntary and the information obtained will not be revealed to anyone outside of the researcher. You may elect not to answer a question, if it makes you uncomfortable.

Voluntary Participation: Participation is completely voluntary and you may decline to participate or withdraw from the study at any time without jeopardy. Likewise, the researcher may cancel this study at any time. You will not receive monetary compensation for participation in this study. You will receive a gift card for participating in the posttest and follow up survey. If you have any questions about this study, you may contact the researcher (Annette Besnilian) or the faculty advisor (Peggy Johnson):

Researcher: Annette Besnilian, MPH, RD (*annette.besnilian@csun.edu*; 818-726-1562)

Faculty Advisor: Peggy Johnson, Ed.D (*peggy.johnson@csun.edu*; 818.677.7856)

If you are unable to reach a member of the research team listed above and have general questions, or you have concerns or complaints about the research study, research team, or questions about your rights as a research subject, please contact Research and Sponsored Projects, 18111 Nordhoff Street, California State University, Northridge, Northridge, CA 91330-8232, or phone 818-677-2901.

I have read the above and understand the conditions outlined for participation in the described study. I have been provided with a copy of this consent form to keep and I give informed consent to participate in the study.

Participant Printed Name:

Last First MI

Signature: Date:

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
EXPERIMENTAL SUBJECTS
BILL OF RIGHTS

The rights below are the rights of every person who is asked to be in a research study. As an experimental subject I have the following rights:

- 1) To be told what the study is trying to find out,
- 2) To be told what will happen to me and whether any of the procedures, drugs, or devices is different from what would be used in standard practice,
- 3) To be told about the frequent and/or important risks, side effects or discomforts of the things that will happen to me for research purposes,
- 4) To be told if I can expect any benefit from participating, and, if so, what the benefit might be,
- 5) To be told the other choices I have and how they may be better or worse than being in the study,
- 6) To be allowed to ask any questions concerning the study both before agreeing to be involved and during the course of the study,
- 7) To be told what sort of medical treatment (if needed) is available if any complications arise,
- 8) To refuse to participate at all or to change my mind about participation after the study is started. This decision will not affect my right to receive the care I would receive if I were not in the study.
- 9) To receive a copy of the signed and dated consent form.
- 10) To be free of pressure when considering whether I wish to agree to be in the study.

If I have other questions I should ask the researcher or the research assistant, or contact Research and Sponsored Projects, California State University, Northridge, 18111 Nordhoff Street, Northridge, CA 91330-8232, or phone (818) 677-2901.

X

Signature of Subject Date

CALIFORNIA STATE UNIVERSITY, NORTHRIDGE
FORMULARIO DE CONSENTIMIENTO DE LOS PADRES

Título del Proyecto: Una probada de la buena salud: Talleres ofrecidos en la escuelas para padres y familia que ofrecen información para reducir la obesidad infantil

Introducción: El proyecto “Una probada de la buena salud”, conducida por Annette Besnilian, MPH, RD, CLE, fue diseñado para brindar clases educativas a padres de hijos en la primaria con la intención de ayudarlos a mejorar el estilo de vida de sus familias. Las clases enseñan a los padres que participan como comer y cocinar saludable y informan sobre la importancia de la actividad física con el propósito de motivar a las familias a que adopten hábitos saludables y así poder prevenir y reducir los peligros asociados con la obesidad infantil. Cambios en los hábitos de cocinar, comer, y actividad física, el conocimiento de nutrición, preparación de comidas, y actividad física, el peso corporal, el índice de masa corporal, y el porcentaje de grasa en el cuerpo de los participantes serán examinado al principio del programa, después de haber completado el programa y durante una sesión posterior. Todas las medidas de los participantes serán tomadas en privado y la investigadora mantendrá los datos en confidencia.

Descripción del proyecto: Usted puede participar en el programa aun cuando decida no participar en la evaluación. Si usted acepta participar en el programa, se le pedirá que conteste una encuesta al principio de la primera clase ofrecida. La encuesta contiene preguntas sobre nutrición, actividad física y el conocimiento de la preparación de comida. Su peso corporal y porcentaje de grasa corporal serán medidas al principio del programa, después de cuatro semanas y durante una sesión posterior. Después de haber completado el programa, se le pedirá que conteste la misma encuesta y que participen en una sesión en donde podrán hacer comentarios sobre el programa y durante la prueba de evaluación (semana 4) y otra vez durante la sesión posterior (semana 12).

El examen de ingreso se realizará durante la primera semana del programa y antes de la primera clase y durará aproximadamente 15-20 minutos. El examen posterior se realizará al final de la clase en la semana 4 de clases y durará aproximadamente 15-30 minutos. Las sesión posterior, la cual es considera la quinta clase, se realizará en la semana 12. Esta sesión durara aproximadamente 30-45 minutes. Habrán 2 personas que anotarán sus respuestas durante las semanas 4 y 12. Todos los participantes serán invitados a que respondan; sin embargo, usted no tiene que contestar si no quiere. Todas las evaluaciones se toman al cabo en el centro de padres de cada escuela que esta participando en esta investigación.

Información del sujeto: Padres de hijos que asisten a una de las cinco primarias públicas que fueron pre-elegidas en LAUSD y que también asisten a el taller educativo para los padres llamada “Una probada de la buena salud”.

Confidencialidad y disposición final de los datos: La investigadora mantendrá la información colectada sobre los sujetos en confidencia. Los datos serán guardados en la computadora de la investigadora y serán protegidos con un nombre de usuario y una clave. Ninguna otras personas tendrán acceso a esta información. Seudónimos también serán usados. Los resultados acumulados de esta investigación serán publicados pero los nombres o identidades de los sujetos no serán hechos públicos.

Beneficio de su participación: Usted recibirá educación vital sobre nutrición, como cocinar saludable y esto incluye una oportunidad de probar, y actividad física. Todos los materiales educativos y comida serán provisto. Además, los participantes que accedan a contestar la prueba de evaluación y la encuesta

posterior durante las semanas cuatro y doce serán elegibles para recibir un certificado de regalo como compensación por su participación.

Riesgos/preocupaciones: Esta investigación no presenta algún tipo de riesgo para los sujetos. La investigación actual es voluntaria y la información obtenida no será revelada a nadie que no sea la investigadora. Usted puede dejar cualquier pregunta sin contestación si la pregunta lo hace sentir incomodo/a.

Participación voluntaria: Participación es completamente voluntaria y usted puede rechazar la invitación de participación o retirarse de la investigación en cualquier momento sin ningún riesgo. De la misma manera, la investigadora puede cancelar la investigación en cualquier momento.

Usted no recibirá compensación monetaria por su participación en la investigación. Usted recibirá un tarjeta de regalo después de haber completado la prueba de evaluación y la encuesta posterior.

Si usted tiene alguna pregunta sobre esta investigación, contacte a la investigadora (Annette Besnilian) o a la consejera de facultad (Peggy Johnson):

Investigadora: Annette Besnilian, MPH, RD (annette.besnilian@csun.edu; 818-726-1562)

Consejera de facultad: Peggy Johnson, Ed.D (peggy.johnson@csun.edu; 818.677.7856)

Si usted no puede localizar algún miembro del equipo de investigación mencionado arriba y tiene preguntas generales o preocupaciones o quejas sobre esta investigación o el equipo de investigación, o tiene preguntas sobre sus derechos como sujeto de esta investigación, por favor contacte a Research and Sponsored Projects, 18111 Nordhoff Street, California State University, Northridge, Northridge, CA 91330-8232, o llame al 818-677-2901.

He leído la información provista arriba y entiendo las condiciones de participación para esta investigación tal y como esta resumida. He recibido una copia del formulario de consentimiento y doy mi consentimiento para participar en esta investigación por escrito.

Nombre del participante (en molde):

Apellido Nombre Segundo nombre

Firma: Fecha:

UNIVERSIDAD ESTATAL de CALIFORNIA, NORTHRIDGE

SUJETOS EXPERIMENTALES

DECLARACION de DERECHOS

Los derechos que a continuación se mencionan, son los derechos de cada persona que participa en esta investigación. Toda persona al participar en estos estudios, tiene derecho:

1. A saber que es lo que el estudio esta tratando de investigar,
2. A estar informado de lo que sucederá, los procedimientos, los medicamentos, y los dispositivos, sean ó no diferentes a los utilizados en un procedimiento normal,
3. A saber la frecuencia y/ó el grado de riesgo, efectos secundarios, ó incomodidades que sucederan en el transcurso de la investigación,
4. A saber si hay algún beneficio al participar en el estudio, y cual sería ese beneficio,
5. A saber si existen otras alternativas que puedan ser mejores ó peores que, participar en esta investigación,
6. A que se le permita hacer preguntas antes de participar en el estudio, al igual que en el transcurso del mismo,
7. A saber que tipo de tratamiento médico (si es necesario) está disponible en caso de que ocurran complicaciones,
8. A renunciar a la participación en el estudio, aún cuando ya haya comenzado. Cualquier cambio de decisión no afectará el derecho a recibir la atención que se proveya al no ser parte de esta investigación,
9. A recibir una copia firmada y fechada de la hoja donde se autorizó la participación,
10. A estar libre de cualquier presión al decidir si quiere ó no participar en el estudio.

En caso de tener preguntas, puede comunicarse con el investigador, el asistente de investigación, ó a la oficina de Research & Sponsored Projects, California State University, Northridge, 18111 Nordhoff Street, Northridge, CA 91330-8232 ó al teléfono (818) 677-2901

X

Firma del participante Fecha

APPENDIX B

QUESTIONNAIRE PRETEST

Name: _____ Date: _____ School: _____

What is your gender? 1. Male 2. Female

What is your age? _____

What is your marital status?

1. Single, never married 2. Married 3. Divorced 4. Remarried 5. Widowed

Who do you live with? *Example – spouse/partner, 2 sons, 1 daughter, mother-in-law*

In terms of an ethnicity/race, I am:

1. African American/Black 2. Asian 3. Caucasian/White
4. Hispanic/Latino 5. Native American 6. Other _____

What is your employment status?

1. Full-time job (40+ hours) 2. Part-time 3. Unemployed, seeking employment
4. Unemployed, stay-at-home parent

What's the highest level of education you completed?

1. No schooling completed 2. Less than high school
3. High school degree or equivalent 4. Some college 5. College degree

In the last MONTH, how often have you and your family done the following?	Never	Once a month	1-3 days per week	4-6 days per week	6 or more times per week	1 or more times per day
Eat fruits	0	1	2	3	4	5
Eat vegetables	0	1	2	3	4	5
Eat luncheon meats (e.g., salami, bologna, hot dogs)	0	1	2	3	4	5
Eat chicken, turkey, or lean beef	0	1	2	3	4	5
Eat pork, ham, or bacon	0	1	2	3	4	5
Eat beans or lentils	0	1	2	3	4	5
Eat soy or soy products (e.g., edamame, tofu, or soy milk)	0	1	2	3	4	5
Eat nuts (e.g., almonds, cashews, walnuts)	0	1	2	3	4	5
Eat fish	0	1	2	3	4	5
Eat eggs	0	1	2	3	4	5
Eat egg whites	0	1	2	3	4	5
Eat regular cheese, yogurt, or cottage cheese	0	1	2	3	4	5
Eat reduced fat or light cheese, yogurt, or cottage cheese	0	1	2	3	4	5
Drink regular milk	0	1	2	3	4	5
Drink fat-free or low-fat milk	0	1	2	3	4	5
Eat regular ice cream	0	1	2	3	4	5

In the last MONTH, how often have you and your family done the following?	Never	Once a month	1-3 days per week	4-6 days per week	6 or more times per week	1 or more times per day
Eat low-fat or fat-free frozen desserts (e.g., frozen yogurt or sorbet)	0	1	2	3	4	5
Eat hot cereal (e.g., oatmeal, cream of wheat)	0	1	2	3	4	5
Eat sugary cold cereal (e.g., Frosted flakes, Trix, Lucky Charms, Cinnamon Toast Crunch)	0	1	2	3	4	5
Eat non-sugary cold cereals (e.g., Cheerios, Bran Flakes, Corn Flakes, Rice Krispies)	0	1	2	3	4	5
Eat whole-wheat pasta, bread, rice, or tortillas	0	1	2	3	4	5
Eat white pasta, bread, rice, or tortillas	0	1	2	3	4	5
Drink regular soda	0	1	2	3	4	5
Drink 100% juice	0	1	2	3	4	5
Drink sweetened drinks (e.g., Gatorade, Hawaiian Punch, or lemonade)	0	1	2	3	4	5
Eat chips (e.g., tortilla chips, potato chips, Cheetos)	0	1	2	3	4	5
Eat lower-fat snack items (e.g., pretzels, whole grain crackers, or popcorn)	0	1	2	3	4	5
Eat cookies, cake, donuts, or candy	0	1	2	3	4	5
Use regular salad dressing, mayonnaise, or cream sauces	0	1	2	3	4	5
Use olive oil, vinaigrette, or fat free salad dressings	0	1	2	3	4	5
Use and eat butter or margarine	0	1	2	3	4	5
Use cooking oils (e.g., olive, grapeseed, canola, corn, peanut, sunflower, safflower)	0	1	2	3	4	5
Eat fried foods (e.g., French fries, fried chicken)	0	1	2	3	4	5
Eat ready-made frozen dinners (e.g., TV dinners, Lean Cuisine, or microwaveable meals)	0	1	2	3	4	5
Eat fast food	0	1	2	3	4	5
Eat 5-6 meals and snacks per day	0	1	2	3	4	5
Prepare and eat breakfast at home	0	1	2	3	4	5
Prepare and eat dinner at home	0	1	2	3	4	5
Eat dinner with the entire family	0	1	2	3	4	5
Prepare meals together as a family	0	1	2	3	4	5
Use herbs and spices	0	1	2	3	4	5
Prepare meats and poultry using baking or grilling methods	0	1	2	3	4	5
Remove the skin and trim the fat when cooking meats and poultry	0	1	2	3	4	5

In the last MONTH, how often have you and your family done the following?	Never	Once a month	1-3 days per week	4-6 days per week	6 or more times per week	1 or more times per day
Read food labels	0	1	2	3	4	5
Walk for 30 minutes or more a day	0	1	2	3	4	5
Engage in aerobic activity (e.g., jogging, biking, swimming)	0	1	2	3	4	5
Are involved in a group activity (e.g., organized sports, soccer, basketball, baseball)	0	1	2	3	4	5

On the next questions, please do not guess. If you are 'not sure', then answer 'not sure'.

- Which food group is **not** included in MyPlate?
a. Grains b. Fruits c. Fats and Oils d. Vegetables e. Dairy f. Protein **g. Not Sure**
- What is the **first** thing you should look at when reading food labels?
a. Calories b. Total Fat c. Serving Size d. Total Sugars **e. Not Sure**
- How many **total** servings of fruit and vegetables do you need **per day**?
a. 1-2 Servings b. 3-4 Servings c. 6 or More Servings d. None of the Above **e. Not Sure**
- What is the **minimum** amount of exercise you should do per day?
a. 10 minutes b. 30 minutes c. 40 minutes d. 1 hour **e. Not Sure**

Please do not guess.

Dairy products...	Yes	No	Not sure
Contain fiber.	1	2	3
Contain vitamin D.	1	2	3
Help prevent osteoporosis.	1	2	3
Diabetes is...	Yes	No	Not sure
Related to blood sugar levels.	1	2	3
Related to blood protein levels.	1	2	3
Related to blood cholesterol levels.	1	2	3
Only inherited.	1	2	3
Which of the following can prevent heart disease?	Yes	No	Not sure
Maintaining a health weight	1	2	3
Drinking alcohol	1	2	3
Eating more protein	1	2	3
Protein...	Yes	No	Not sure
Repairs tissues.	1	2	3
Encourages muscle growth.	1	2	3
Improves organ function.	1	2	3
Which of the following are good sources of protein?	Yes	No	Not sure
Fruit	1	2	3
Meat	1	2	3
Eggs	1	2	3
Beans	1	2	3
Soy	1	2	3
Which of the following is smart shopping?	Yes	No	Not sure
Buying frozen fruit and vegetables	1	2	3
Visiting the local farmer's market.	1	2	3
Buying more items than you actually need.	1	2	3

Which of the following are more healthy when eating out?	Yes	No	Not sure
Asking for sauces on the side.	1	2	3
Avoiding “all you can eat” buffets.	1	2	3
Choosing fruit for dessert instead of ice cream	1	2	3
Choosing water instead of soft drinks.	1	2	3
Eating breakfast...	Yes	No	Not sure
Will help maintain your weight.	1	2	3
Will you from overeating at lunch.	1	2	3
Fuels your body after not eating all night.	1	2	3
Which are healthy options for preparing chicken, turkey, or fish?	Yes	No	Not sure
Frying	1	2	3
Baking	1	2	3
Grilling	1	2	3
Sautéing	1	2	3
Exercise is important to...	Yes	No	Not sure
Control your weight.	1	2	3
Reduce the risk of disease.	1	2	3
Strengthen bones and muscles.	1	2	3
Adults and children should do which of the following to improve health?	Yes	No	Not sure
Strength training	1	2	3
Flexibility exercises	1	2	3
Aerobics	1	2	3
Which of the following can increase your physical activity level throughout the day?	Yes	No	Not sure
Join a walking or running group in the neighborhood	1	2	3
Take the stairs instead of the elevator	1	2	3
Park further away from your destination	1	2	3
Do bicep curls in a chair using household objects	1	2	3

QUESTIONNAIRE PRETEST

Nombre: _____ Fecha: _____
 Escuela: _____

¿Cuál es su género? 1. Hombre 2. Mujer

¿Cuál es su edad? _____

¿Cuál es su estado civil? 1. Sola, nunca se casó 2. Casado 3. Divorciado 4. Se volvió a casar 5. Viuda

¿Con quién vive usted? *Ejemplo – cónyuge, 2 hijos, 1 hija, suegra*

En términos de una etnia/raza, yo soy:

1. Afro Americano / Negro 2. Asiático 3. Caucásico / Blanco 4. Hispano/Latino 5. Nativos Americanos 6. Otro _____

¿Cuál es su situación laboral?

1. Trabajo a tiempo completo (40 horas) 2. Tiempo parcial 3. Sin empleo, en busca de empleo 4. Desempleada, padre/ama de casa

¿Cuál es el nivel de educación más alta que haya completado?

1. No completé los estudios de la primaria 2. Menos de la escuela secundaria 3. Escuela secundaria o equivalente 4. Alguna educación superior

¿Con qué frecuencia hicieron lo siguiente usted y su familia en el último MES?	Nunca	Una vez al mes	1-3 días por semana	4-6 días por semana	6 o más veces por semana	1 o más veces al día
Comen Frutas	0	1	2	3	4	5
Comen vegetales	0	1	2	3	4	5
Comen carnes frías (por ejemplo, salami, mortadela, salchichas)	0	1	2	3	4	5
Comen pollo, pavo, o carne sin grasa	0	1	2	3	4	5
Comen puerco, jamón o tocino	0	1	2	3	4	5
Comen frijoles o lentejas	0	1	2	3	4	5
Comen soya o productos de soya (por ejemplo, frijoles de soya, tofu o leche de soya)	0	1	2	3	4	5
Comen nueces (por ejemplo, almendras, nueces de nogal)	0	1	2	3	4	5
Comen pescado	0	1	2	3	4	5
Comen huevos	0	1	2	3	4	5
Comen las claras de huevos	0	1	2	3	4	5
Comen queso regular, yogur o requesón	0	1	2	3	4	5

Comen queso de grasa reducida, o yogur y requesón ligero	0	1	2	3	4	5
Beben leche regular	0	1	2	3	4	5
Beben leche sin grasa o bajos en grasa	0	1	2	3	4	5
Comen nieve regular	0	1	2	3	4	5
Comen postres congelados bajos en grasa o sin grasa (por ejemplo, yogur nieve o sorbete)	0	1	2	3	4	5
¿Con qué frecuencia hicieron lo siguiente usted y su familia en el último MES?	Nunca	Una vez al mes	1-3 días por semana	4-6 días por semana	6 o más veces por semana	1 o más veces al día
Comen cereales calientes (por ejemplo, avena, crema de trigo)	0	1	2	3	4	5
Comen cereales azucarados y frios (por ejemplo, Frosted flakes, Trix, Lucky Charms, Cinnamon Toast Crunch)	0	1	2	3	4	5
Comen cereales frío que no son azucarados (por ejemplo, Cheerios, Bran Flakes, Corn Flakes, Rice Krispies)	0	1	2	3	4	5
Comen pasta de trigo entero, pan, arroz o tortillas	0	1	2	3	4	5
Comen pasta blanca, pan, arroz o tortillas	0	1	2	3	4	5
Beben soda regular	0	1	2	3	4	5
Beben beber jugo 100% natural	0	1	2	3	4	5
Beben bebidas azucaradas (por ejemplo, Gatorade, Hawaiian Punch, o limonada)	0	1	2	3	4	5
Comen chips (por ejemplo, chips de tortilla, papas fritas, Cheetos)	0	1	2	3	4	5
Comen bocadillos bajos en grasa (por ejemplo, pretzels, galletas de granos integrales, o palomitas de maíz)	0	1	2	3	4	5
Comen galletas, pasteles, donas o caramelos (dulces)	0	1	2	3	4	5
Usan aderezos (mayonesa o salsas de crema)	0	1	2	3	4	5
Utilizan aceite de oliva, vinagre o aderezos sin grasa	0	1	2	3	4	5
Utilizan y comen mantequilla o margarina	0	1	2	3	4	5
Utilizan aceites de cocina	0	1	2	3	4	5

(por ejemplo, aceite de oliva, semilla de uva, canola, maíz, maní, girasol)						
Comen los alimentos fritos (por ejemplo, papas fritas, pollo frito)	0	1	2	3	4	5
Comen comidas preparadas congeladas (por ejemplo, Cuisine o Swansons)	0	1	2	3	4	5
Comen comida rápida	0	1	2	3	4	5
Comen 5-6 comidas y meriendas por día	0	1	2	3	4	5
Preparan y comen desayuno en su casa	0	1	2	3	4	5
Preparan y comen cena en su casa	0	1	2	3	4	5
Comen cena con toda la familia	0	1	2	3	4	5
¿Con qué frecuencia hicieron lo siguiente usted y su familia en el último MES?	Nunca	Una vez al mes	1-3 días por semana	4-6 días por semana	6 o más veces por semana	1 o más veces al día
Preparan las comidas juntos y comen en familia	0	1	2	3	4	5
Usan yerbas y aliños	0	1	2	3	4	5
Preparan carnes y aves en el horno o asan en la parrilla	0	1	2	3	4	5
Quitán la piel y la grasa al cocinar las carnes y aves	0	1	2	3	4	5
Leen las etiquetas de los alimentos	0	1	2	3	4	5
Caminan por 30 minutos o más al día	0	1	2	3	4	5
Participan en la actividad aeróbica física (por ejemplo, correr, montar bicicleta, caminar, nadar)	0	1	2	3	4	5
Están involucrados en una actividad de grupo (por ejemplo, los deportes organizados, fútbol, baloncesto, béisbol)	0	1	2	3	4	5

POR FAVOR NO ADIVINEN EN LAS SIGUIENTES PREGUNTAS. SI USTED NO ESTÁ SEGURO, MARCEN “NO ESTOY SEGURO”

1. ¿Qué grupo de alimentos no está incluido en MiPlato?
- a. Granos b. Frutas c. Grasas y aceites d. Vegetales e. Lácteos f. Proteína g. No estoy seguro

2. ¿Qué es lo **primero** que debe tener en cuenta al leer las etiquetas de los alimentos?
a. Calorías b. Grasa total c. Tamaño de la porción d. Total de azúcar e. No estoy seguro
3. ¿Cuántas porciones **totales** de frutas y vegetales se necesita **por día**?
a. 1-2 porciones b. 3-4 porciones c. 6 o más porciones d. Ninguna de las anteriores e. No estoy seguro
4. ¿Cuál es la cantidad **mínima** de ejercicio que debe hacer por día?
a. 10 minutos b. 30 minutos c. 40 minutos d. 1 hora e. No estoy seguro

POR FAVOR NO ADIVINE.

Productos lácteos...	Si	No	No está seguro
Contienen vitamina D.	1	2	3
Ayudan a prevenir la osteoporosis	1	2	3
El Diabetes es...	Si	No	No está seguro
Esta relacionada con los niveles de azúcar en la sangre.	1	2	3
Esta relacionado con los niveles de proteína de la sangre.	1	2	3
Esta relacionado con la cantidad de colesterol en sangre.	1	2	3
Heredado solamente.	1	2	3
¿Cuál de los siguientes puede prevenir la enfermedad de corazón?	Si	No	No está seguro
Mantener un peso saludable.	1	2	3
Beber alcohol.	1	2	3
Comer más proteínas.	1	2	3

Proteína....	Yes	No	No está seguro
Reparara los tejidos.	1	2	3
Fomenta el crecimiento muscular.	1	2	3
Mejora el funcionamiento de los órganos.	1	2	3
¿Cuál de las siguientes opciones son buenas fuentes de proteína?	Si	No	No está seguro
Frutas	1	2	3
Carnes	1	2	3
Huevos	1	2	3
Frijoles	1	2	3
Soya	1	2	3
¿Cuál de las siguientes opciones es la compra inteligente?	Si	No	No está seguro
Comprar frutas y vegetales congeladas.	1	2	3
Visitar a los mercados del agricultor local.	1	2	3
Comprar artículos más de lo que realmente necesita.	1	2	3
¿Cuál de los siguientes son más saludables cuando se come afuera de la casa?	Si	No	No está seguro
Pidiendo salsas en el lado.	1	2	3
Evitar el "todo lo que puedas comer" buffet.	1	2	3
Eligiendo fruta para el postre en lugar de nieve.	1	2	3
Tomar agua en lugar de refrescos.	1	2	3
Comiendo desayuno...	Si	No	No está

			seguro
Ayudará a mantener tu peso.	1	2	3
Ayuda evitar que coma en exceso durante la hora de comida.	1	2	3
Alimenta su cuerpo después de no haber comido durante toda la noche.	1	2	3
¿Cuáles son las opciones saludables para la preparación de pollo, pavo o pescado?	Si	No	No está seguro
Freír	1	2	3
Hornar	1	2	3
Asar a la parrilla	1	2	3
Saltear	1	2	3
Ejercicio es importante para.....	Si	No	No está seguro
Controlar su peso.	1	2	3
Reducir el riesgo de enfermedad.	1	2	3
Reforzar los músculos y los huesos	1	2	3
¿Cuál de los siguientes deberían participar los adultos y niños porque ayudan a mejorar la salud?	Si	No	No está seguro
Entrenamiento de fuerza.	1	2	3
Ejercicios de flexibilidad.	1	2	3
Ejercicios aeróbicos.	1	2	3
¿Cuál de los siguientes puede aumentar su nivel de actividad física durante el día?	Si	No	No está seguro
Unirse a un grupo para caminar o correr en la vecindad.	1	2	3
Usar las escaleras en lugar del ascensor.	1	2	3
Estacionarse más lejos de su destino.	1	2	3
Hacer flexiones de bíceps en una silla con objetos de la casa.	1	2	3

APPENDIX C

QUESTIONNAIRE POST TEST AND FOLLOW UP

Name: _____ Date: _____ School: _____

In the last MONTH, how often have you and your family done the following?	Never	Once a month	1-3 days per week	4-6 days per week	6 or more times per week	1 or more times per day
Eat fruits	0	1	2	3	4	5
Eat vegetables	0	1	2	3	4	5
Eat luncheon meats (e.g., salami, bologna, hot dogs)	0	1	2	3	4	5
Eat chicken, turkey, or lean beef	0	1	2	3	4	5
Eat pork, ham, or bacon	0	1	2	3	4	5
Eat beans or lentils	0	1	2	3	4	5
Eat soy or soy products (e.g., edamame, tofu, or soy milk)	0	1	2	3	4	5
Eat nuts (e.g., almonds, cashews, walnuts)	0	1	2	3	4	5
Eat fish	0	1	2	3	4	5
Eat eggs	0	1	2	3	4	5
Eat egg whites	0	1	2	3	4	5
Eat regular cheese, yogurt, or cottage cheese	0	1	2	3	4	5
Eat reduced fat or light cheese, yogurt, or cottage cheese	0	1	2	3	4	5
Drink regular milk	0	1	2	3	4	5
Drink fat-free or low-fat milk	0	1	2	3	4	5
Eat regular ice cream	0	1	2	3	4	5
Eat low-fat or fat-free frozen desserts (e.g., frozen yogurt or sorbet)	0	1	2	3	4	5
Eat hot cereal (e.g., oatmeal, cream of wheat)	0	1	2	3	4	5
Eat sugary cold cereal (e.g., Frosted flakes, Trix, Lucky Charms, Cinnamon Toast Crunch)	0	1	2	3	4	5
Eat non-sugary cold cereals (e.g., Cheerios, Bran Flakes, Corn Flakes, Rice Krispies)	0	1	2	3	4	5
Eat whole-wheat pasta, bread, rice, or tortillas	0	1	2	3	4	5
Eat white pasta, bread, rice, or tortillas	0	1	2	3	4	5
Drink regular soda	0	1	2	3	4	5
Drink 100% juice	0	1	2	3	4	5
Drink sweetened drinks (e.g., Gatorade, Hawaiian Punch, or lemonade)	0	1	2	3	4	5
Eat chips (e.g., tortilla chips, potato chips, Cheetos)	0	1	2	3	4	5
Eat lower-fat snack items	0	1	2	3	4	5

(e.g., pretzels, whole grain crackers, or popcorn)						
In the last MONTH, how often have you and your family done the following?	Never	Once a month	1-3 days per week	4-6 days per week	6 or more times per week	1 or more times per day
Eat cookies, cake, donuts, or candy	0	1	2	3	4	5
Use regular salad dressing, mayonnaise, or cream sauces	0	1	2	3	4	5
Use olive oil, vinaigrette, or fat free salad dressings	0	1	2	3	4	5
Use and eat butter or margarine	0	1	2	3	4	5
Use cooking oils (e.g., olive, grapeseed, canola, corn, peanut, sunflower, safflower)	0	1	2	3	4	5
Eat fried foods (e.g., French fries, fried chicken)	0	1	2	3	4	5
Eat ready-made frozen dinners (e.g., TV dinners, Lean Cuisine, or microwaveable meals)	0	1	2	3	4	5
Eat fast food	0	1	2	3	4	5
Eat 5-6 meals and snacks per day	0	1	2	3	4	5
Prepare and eat breakfast at home	0	1	2	3	4	5
Prepare and eat dinner at home	0	1	2	3	4	5
Eat dinner with the entire family	0	1	2	3	4	5
Prepare meals together as a family	0	1	2	3	4	5
Use herbs and spices	0	1	2	3	4	5
Prepare meats and poultry using baking or grilling methods	0	1	2	3	4	5
Remove the skin and trim the fat when cooking meats and poultry	0	1	2	3	4	5
Read food labels	0	1	2	3	4	5
Walk for 30 minutes or more a day	0	1	2	3	4	5
Engage in aerobic activity (e.g., jogging, biking, swimming)	0	1	2	3	4	5
Are involved in a group activity (e.g., organized sports, soccer, basketball, baseball)	0	1	2	3	4	5

On the next questions, please do not guess. If you are 'not sure', then answer 'not sure'.

- Which food group is **not** included in MyPlate?
a. Grains b. Fruits c. Fats and Oils d. Vegetables e. Dairy f. Protein **g. Not Sure**
- What is the **first** thing you should look at when reading food labels?
a. Calories b. Total Fat c. Serving Size d. Total Sugars **e. Not Sure**
- How many **total** servings of fruit and vegetables do you need **per day**?
a. 1-2 Servings b. 3-4 Servings c. 6 or More Servings d. None of the Above **e. Not Sure**
- What is the **minimum** amount of exercise you should do per day?
a. 10 minutes b. 30 minutes c. 40 minutes d. 1 hour **e. Not Sure**

Please do not guess.

Dairy products...	Yes	No	Not sure
Contain fiber.	1	2	3
Contain vitamin D.	1	2	3
Help prevent osteoporosis.	1	2	3
Diabetes is...	Yes	No	Not sure
Related to blood sugar levels.	1	2	3
Related to blood protein levels.	1	2	3
Related to blood cholesterol levels.	1	2	3
Only inherited.	1	2	3
Which of the following can prevent hearth disease?	Yes	No	Not sure
Maintaining a health weight	1	2	3
Drinking alcohol	1	2	3
Eating more protein	1	2	3
Protein...	Yes	No	Not sure
Repairs tissues.	1	2	3
Encourages muscle growth.	1	2	3
Improves organ function.	1	2	3
Which of the following are good sources of protein?	Yes	No	Not sure
Fruit	1	2	3
Meat	1	2	3
Eggs	1	2	3
Beans	1	2	3
Soy	1	2	3
Which of the following is smart shopping?	Yes	No	Not sure
Buying frozen fruit and vegetables	1	2	3
Visiting the local farmer's market.	1	2	3
Buying more items than you actually need.	1	2	3
Which of the following are more healthy when eating out?	Yes	No	Not sure
Asking for sauces on the side.	1	2	3
Avoiding "all you can eat" buffets.	1	2	3
Choosing fruit for dessert instead of ice cream	1	2	3
Choosing water instead of soft drinks.	1	2	3
Eating breakfast...	Yes	No	Not sure
Will help maintain your weight.	1	2	3
Will you from overeating at lunch.	1	2	3
Fuels your body after not eating all night.	1	2	3
Which are healthy options for preparing chicken, turkey, or fish?	Yes	No	Not sure
Frying	1	2	3
Baking	1	2	3
Grilling	1	2	3
Sautéing	1	2	3
Exercise is important to...	Yes	No	Not sure
Control your weight.	1	2	3
Reduce the risk of disease.	1	2	3
Strengthen bones and muscles.	1	2	3
Adults and children should do which of the following to improve health?	Yes	No	Not sure
Strength training	1	2	3
Flexibility exercises	1	2	3

Aerobics	1	2	3
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Which of the following can increase your physical activity level throughout the day?	Yes	No	Not sure
Join a walking or running group in the neighborhood	1	2	3
Take the stairs instead of the elevator	1	2	3
Park further away from your destination	1	2	3
Do bicep curls in a chair using household objects	1	2	3

QUESTIONNAIRE POST TEST AND FOLLOW UP

Nombre: _____ Fecha: _____

Escuela: _____

¿Con qué frecuencia hicieron lo siguiente usted y su familia en el último MES?	Nunca	Una vez al mes	1-3 días por semana	4-6 días por semana	6 o más veces por semana	1 o más veces al día
Comen Frutas	0	1	2	3	4	5
Comen vegetales	0	1	2	3	4	5
Comen carnes frías (por ejemplo, salami, mortadela, salchichas)	0	1	2	3	4	5
Comen pollo, pavo, o carne sin grasa	0	1	2	3	4	5
Comen puerco, jamón o tocino	0	1	2	3	4	5
Comen frijoles o lentejas	0	1	2	3	4	5
Comen soya o productos de soya (por ejemplo, frijoles de soya, tofu o leche de soya)	0	1	2	3	4	5
Comen nueces (por ejemplo, almendras, nueces de nogal)	0	1	2	3	4	5
Comen pescado	0	1	2	3	4	5
Comen huevos	0	1	2	3	4	5
Comen las claras de huevos	0	1	2	3	4	5
Comen queso regular, yogur o requesón	0	1	2	3	4	5
Comen queso de grasa reducida, o yogur y requesón ligero	0	1	2	3	4	5
Beben leche regular	0	1	2	3	4	5
Beben leche sin grasa o bajos en grasa	0	1	2	3	4	5
Comen nieve regular	0	1	2	3	4	5
Comen postres congelados bajos en grasa o sin grasa (por ejemplo, yogur nieve o sorbete)	0	1	2	3	4	5
Comen cereales calientes (por ejemplo, avena, crema de trigo)	0	1	2	3	4	5
Comen cereales azucarados y fríos (por ejemplo, Frosted flakes, Trix, Lucky Charms, Cinnamon Toast Crunch)	0	1	2	3	4	5
Comen cereales frío que no son azucarados (por ejemplo, Cheerios, Bran Flakes, Corn Flakes, Rice Krispies)	0	1	2	3	4	5

Comen pasta de trigo entero, pan, arroz o tortillas	0	1	2	3	4	5
Comen pasta blanca, pan, arroz o tortillas	0	1	2	3	4	5
Beben soda regular	0	1	2	3	4	5
Beben beber jugo 100% natural	0	1	2	3	4	5
Beben bebidas azucaradas (por ejemplo, Gatorade, Hawaiian Punch, o limonada)	0	1	2	3	4	5

¿Con qué frecuencia hicieron lo siguiente usted y su familia en el último MES?	Nunca	Una vez al mes	1-3 días por semana	4-6 días por semana	6 o más veces por semana	1 o más veces al día
Comen chips (por ejemplo, chips de tortilla, papas fritas, Cheetos)	0	1	2	3	4	5
Comen bocadillos bajos en grasa (por ejemplo, pretzels, galletas de granos integrales, o palomitas de maíz)	0	1	2	3	4	5
Comen galletas, pasteles, donas o caramelos (dulces)	0	1	2	3	4	5
Usan aderezos (mayonesa o salsas de crema)	0	1	2	3	4	5
Utilizan aceite de oliva, vinagre o aderezos sin grasa	0	1	2	3	4	5
Utilizan y comen mantequilla o margarina	0	1	2	3	4	5
Utilizan aceites de cocina (por ejemplo, aceite de oliva, semilla de uva, canola, maíz, maní, girasol)	0	1	2	3	4	5
Comen los alimentos fritos (por ejemplo, papas fritas, pollo frito)	0	1	2	3	4	5
Comen comidas preparadas congeladas (por ejemplo, Lean Cuisine o Swansons)	0	1	2	3	4	5
Comen comida rápida	0	1	2	3	4	5
Comen 5-6 comidas y meriendas por día	0	1	2	3	4	5
Preparan y comen desayuno en su casa	0	1	2	3	4	5
Preparan y comen cena en su casa	0	1	2	3	4	5
Comen cena con toda la familia	0	1	2	3	4	5
Preparan las comidas juntos y comen en familia	0	1	2	3	4	5
Usan yerbas y aliños	0	1	2	3	4	5
Preparan carnes y aves en el	0	1	2	3	4	5

horno o asan en la parrilla						
Quitan la piel y la grasa al cocinar las carnes y aves	0	1	2	3	4	5
Leen las etiquetas de los alimentos	0	1	2	3	4	5
Caminan por 30 minutos o más al día	0	1	2	3	4	5
Participan en la actividad aeróbica física (por ejemplo, correr, montar bicicleta, caminar, nadar)	0	1	2	3	4	5
Están involucrados en una actividad de grupo (por ejemplo, los deportes organizados, fútbol, baloncesto, béisbol)	0	1	2	3	4	5

En las siguientes preguntas, por favor, no adivinan. Si usted no está seguro marcen “no estoy seguro”

- ¿Qué grupo de alimentos no está incluido en MiPlato?
 - Granos
 - Frutas
 - Grasas y aceites
 - Vegetales
 - Lácteos
 - Proteína
 - No está seguro
- ¿Qué es lo primero que debe tener en cuenta al leer las etiquetas de los alimentos?
 - Calorías
 - Grasa total
 - Tamaño de la porción
 - Total de azúcar
 - No está seguro
- ¿Cuántas porciones totales de frutas y vegetales se necesita por día?
 - 1-2 porciones
 - 3-4 porciones
 - 6 o más porciones
 - Ninguna de las anteriores
 - No está seguro
- ¿Cuál es la cantidad mínima de ejercicio que debe hacer por día?
 - 10 minutos
 - 30 minutos
 - 40 minutos
 - 1 hora
 - No está seguro

POR FAVOR NO ADIVINE.

Productos lácteos...	Si	No	No está seguro
Contienen vitamina D.	1	2	3
Ayudan a prevenir la osteoporosis	1	2	3
El Diabetes es...	Si	No	No está seguro
Esta relacionada con los niveles de azúcar en la sangre.	1	2	3
Esta relacionado con los niveles de proteína de la sangre.	1	2	3
Esta relacionado con la cantidad de colesterol en sangre.	1	2	3
Heredado solamente.	1	2	3
¿Cuál de los siguientes puede prevenir la enfermedad de corazón?	Si	No	No está seguro
Mantener un peso saludable.	1	2	3
Beber alcohol.	1	2	3
Comer más proteínas.	1	2	3

Proteína....	Yes	No	No está seguro
Reparara los tejidos.	1	2	3
Fomenta el crecimiento muscular.	1	2	3

Mejora el funcionamiento de los órganos.	1	2	3
¿Cuál de las siguientes opciones son buenas fuentes de proteína?	Si	No	No está seguro
Frutas	1	2	3
Carnes	1	2	3
Huevos	1	2	3
Frijoles	1	2	3
Soya	1	2	3
¿Cuál de las siguientes opciones es la compra inteligente?	Si	No	No está seguro
Comprar frutas y vegetales congeladas.	1	2	3
Visitar a los mercados del agricultor local.	1	2	3
Comprar artículos más de lo que realmente necesita.	1	2	3
¿Cuál de los siguientes son más saludables cuando se come afuera de la casa?	Si	No	No está seguro
Pidiendo salsas en el lado.	1	2	3
Evitar el "todo lo que puedas comer" buffet.	1	2	3
Eligiendo fruta para el postre en lugar de nieve.	1	2	3
Tomar agua en lugar de refrescos.	1	2	3
Comiendo desayuno...	Si	No	No está seguro
Ayudará a mantener tu peso.	1	2	3
Ayuda evitar que coma en exceso durante la hora de comida.	1	2	3
Alimenta su cuerpo después de no haber comido durante toda la noche.	1	2	3
¿Cuáles son las opciones saludables para la preparación de pollo, pavo o pescado?	Si	No	No está seguro
Freír	1	2	3
Hornar	1	2	3
Asar a la parrilla	1	2	3
Saltear	1	2	3
Ejercicio es importante para.....	Si	No	No está seguro
Controlar su peso.	1	2	3
Reducir el riesgo de enfermedad.	1	2	3
Reforzar los músculos y los huesos	1	2	3
¿Cuál de los siguientes deberían participar los adultos y niños porque ayudan a mejorar la salud?	Si	No	No está seguro
Entrenamiento de fuerza.	1	2	3
Ejercicios de flexibilidad.	1	2	3
Ejercicios aeróbicos.	1	2	3
¿Cuál de los siguientes puede aumentar su nivel de actividad física durante el día?	Si	No	No está seguro
Unirse a un grupo para caminar o correr en la vecindad.	1	2	3
Usar las escaleras en lugar del ascensor.	1	2	3
Estacionarse más lejos de su destino.	1	2	3
Hacer flexiones de bíceps en una silla con objetos de la casa.	1	2	3

APPENDIX D

DEBRIEFING QUESTIONNAIRES FOR POSTTEST (WEEK 4) & FOLLOW UP

(WEEK 12)

Posttest (Week 4)

- (1) How can this program be changed or improved to be more helpful to you?
- (2) Which parts of the program were **most** useful?
- (3) Which parts of the program were **least** useful?

How well was the program implemented? How can we improve the program to make it easier to understand ? How can we clarify things?

Debriefing Questionnaire Follow Up (Follow Up Week 12)

1. What are some changes that you and your family have made to your **cooking techniques** because of the program?
2. What are some changes that you and your family have made to your **eating and nutrition behaviors** because of the program?
3. What are some changes that you and your family have made to your **physical activity** behaviors because of the program?
4. From your perspective, how has this program benefited your children?

Posttest (Week 4) Spanish

1. ¿Cómo puede ser cambiado o mejorado este programa para que sea más útil para usted?
2. ¿Qué partes del programa fueron **más** útiles?
3. ¿Qué partes del programa fueron menos útiles?

Preguntas de profundización: ¿Que tan bien fue implementado el programa? ¿Cómo podemos

mejorara el programa y hacerlo más fácil de entender? ¿Cómo podemos aclarar la información presentada?

Debriefing Questionnaire Follow Up (Follow Up Week 12) Spanish

1. ¿Cuáles son algunos cambios que usted y su familia han hecho acerca sus **técnicas de cocinar** debido al programa?
2. ¿Cuáles son algunos cambios que usted y su familia han hecho acerca sus **conductas de alimentación y nutrición** debido al programa?
3. ¿Cuáles son algunos cambios que usted y su familia han hecho a sus comportamientos de **actividad física** debido al programa?
4. ¿En su opinión, cómo ha beneficiado el programa as su hijo(s)?