A CHILDHOOD OBESITY PREVENTION PROGRAM IN THE SAN FERNANDO AREA OF CALIFORNIA

A graduate project submitted in partial fulfillment of the requirements

For the degree of Master of Science in

Family and Consumer Sciences

By

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DEDICATION

This graduate project is dedicated to God. Thank you for your provision, faithfulness, and for making all things possible through Jesus Christ. –Phillipians 4:13

To my husband, Lionel, thank you for giving me encouragement when I needed it most.

Thank you to my three expert panelists for your time and invaluable feedback: Aimee Atkinson, Linda-Luna Franks, and Katie Klier.

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ABSTRACT

A CHILDHOOD OBESITY PREVENTION PROGRAM IN THE SAN FERNANDO VALLEY AREA OF CALIFORNIA

By Estrella Walker

Master of Science in

Family and Consumer Sciences

Childhood obesity is a primary health concern and increasing epidemic in the United States. Childhood obesity prevention programs are currently one of the approaches that are being used to work against the rise of this extensive health concern. This project explores the nutrition education curriculum that was created for the childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families at Facey Medical Foundation in Mission Hills, California for overweight and obese children aged seven to eleven and their families. The curriculum was designed to be presented once a week over the course of four 3-hour sessions addressing the following nutrition topics: MyPlate and portion sizes, healthy beverage choices, disease associated with overweight and obesity, physical activity for the whole family, healthy snack preparation, and intuitive eating and the psychological aspect of childhood obesity. The team for the 5-4-3-2-1-0 Steps to Healthy Families childhood obesity prevention program consists of a Registered Dietitian, and psychologist specializing in pediatrics. The Registered Dietitian is responsible for all of the nutrition education, physical activities, and healthy snack
preparation and demonstrations, while the psychologist focuses on intuitive eating and
the psychological, social, and emotional aspects of dealing with childhood obesity. This
nutrition education program was developed to be used in the San Fernando Valley area to
help lower the childhood obesity rates in the community of Mission Hills, California.
Qualitative observations could be made during implementation of the program, which
could lead to modifications and improvements to the curriculum; further research is
suggested to collect, analyze, and evaluate the effectiveness of the curriculum in
changing knowledge and behavior of participants.
CHAPTER I

INTRODUCTION

Childhood obesity has increased at alarming rates over the past two to-three decades and is now one of the primary health concerns in the United States. Over that time, the number of overweight adolescents and children has doubled (Deckelbaum & Wiliams, 2011). Internationally, 22 million children under the age of five are overweight. Research shows that children who are obese are more at risk for becoming obese adults (an estimated 70-80 percent), increasing their predisposition for higher morbidity and mortality.

In Los Angeles County, 1 in 5 children in the fifth, seventh, and ninth grades are obese (LACDPH, 2007). Overweight and obese children are faced with multiple co-morbidities that coincide with the overweight and obese status including: liver problems, obstructive sleep apnea, asthma, high blood pressure, diabetes, high cholesterol, and orthopedic problems. Overweight and obese children are also forced to deal with public ridicule and teasing, which can often lead to low self esteem and depression (LACDPH, 2007). In 2005, the prevalence of childhood obesity for children in the 5th, 7th, and 9th grades in the San Fernando Area of Los Angeles County was 32.9%. The trajectory of childhood obesity-related repercussions extends from the individual to our society as a whole. The economic burden of obesity, for example, is huge. Annually, childhood obesity is estimated to cost our nation three billion dollars (CDC, 2010).

Childhood obesity is a multi-factorial disease. Prevention efforts, therefore, need to be built to address the various factors that contribute to childhood obesity in order for
them to be effective. Programs should address poverty level, sedentary lifestyle, poor access to places for physical activity level, education and encouragement for families, and the child’s food environment (LACDPH, 2007).

**Statement of the Problem**

There are various different health-related concerns that are associated with childhood obesity. The co-morbidities connected with childhood obesity and adult obesity are often comparable. The most common co-morbid health conditions include: hypertension, dyslipidemia, insulin resistance, and type II diabetes (T2DM) (Deckelbaum & Wiliams, 2011). Other chronic health conditions that are correlated with obesity are coronary artery disease, metabolic syndrome, obstructive sleep apnea, asthma, non-alcohol fatty liver disease, osteoarthritis, and stroke. The consequences of childhood obesity go beyond health; they can also impact the economical, social, and psychological aspects of our society (Deckelbaum & Wiliams, 2011). It is therefore essential to develop effective tools that can be used to curb this rising epidemic and decrease future increase in health care cost. Childhood obesity prevention programs are one of the current tools that are being used to fight childhood obesity and require continuous development and improvement.

**Purpose**

The purpose of this project was to develop a curriculum that could be used in the childhood obesity prevention program at Facey Medical Foundation in Mission Hills, California, the 5-4-3-2-1-0 Steps to Healthy Families. The program was developed with a family-based approach to encourage family involvement and support in the overall improvement in nutrition and physical activity level of program participants. The overall
goal of developing this program curriculum was to provide an effective tool to help lower the rates of childhood overweight and obesity in the Mission Hills, California community. School and family based childhood obesity prevention programs are two of the approaches that are currently being used in our society. The family based approach was selected for this thesis project due to the key role that family plays in the eating behaviors of children. Additionally, analyzing the components of this childhood obesity prevention program enables consideration of what factors make a program effective for the prevention and treatment of childhood obesity. This is essential to understand in order to combat the childhood obesity epidemic that continues to rise across our nation.

Definitions

- **Type II Diabetes Mellitus (T2DM):** Formerly known as adult-onset or non-insulin dependent diabetes (NIDDM), is a chronic condition that affects the way your body metabolizes sugar by either resisting the effects of the hormone insulin or not producing enough insulin. This type of diabetes is now the most common form of diabetes in the pediatric population (Mayo Clinic, 2013).

- **Glucose intolerance:** A condition characterized by blood glucose concentrations that are higher than normal, but not high enough to be diagnosed as diabetes. This condition is a risk factor for diabetes and cardiovascular disease (Mahan & Escott-Stump, 2008).

- **Metabolic Syndrome:** A combination of high blood pressure, high blood sugar level, excess fat around the abdominal area, and high cholesterol that increase the risk of stroke, heart disease, and diabetes (Mayo Clinic, 2013).
- Hypertension: Persistently high arterial blood pressure; defined as systolic blood pressure above 140 mm Hg or diastolic blood pressure above 90 mm Hg (Mahan & Escott-Stump, 2008).
- Hyperlipidemia: High levels of cholesterol, triglycerides, and lipoproteins in the blood which can increase your risk of heart disease (Mayo Clinic, 2013).
- Stroke: Occlusion or hemorrhage of a cerebral artery resulting in impaired function, tissue damage, or death (Mahan & Escott-Stump, 2008).
- Coronary artery disease (CAD): A disease characterized by impaired blood flow in the coronary arteries, which can result in angina, myocardial infarction, and sudden death (Mahan & Escott-Stump, 2008).
- Non-alcohol fatty liver disease: Accumulation of fat in the liver of people who drink little or no alcohol which can result in scarring and inflammation of the liver (Mayo Clinic, 2013).
- Obstructive Sleep Apnea: A sleep disorder common among overweight adults that results in your throat muscles intermittently relaxing and blocking your airway during sleep (Mayo Clinic, 2013).
- Asthma: A condition of hypersensitive airways from allergic and non-allergic causes generated by immunologic responses (Mahan & Escott-Stump, 2008).
- Child: A person between 4 and 12 years old (Mahan & Escott-Stump, 2008).
- Adolescent: A person going through the adolescence period which occurs between the ages of 12 and 18 or 12 and 21 years old (Mahan & Escott-Stump, 2008).
- Teen: A person between 13 and 19 years old (Mahan & Escott-Stump, 2008).
Body Mass Index (BMI): Body mass index is a number calculated from a person’s height and weight. BMI is a fairly reliable indicator of body fatness for most people. It can be used as a screening tool to identify people that are at risk for weight categories that may lead to health problems (CDC, 2011).

Obese children: BMI above the 95th percentile for a child’s age and sex group (Anderson & Butcher, 2006).

Overweight children: BMI above the 85th percentile for a child’s age and sex group (Anderson & Butcher, 2006).

National Health and Nutrition Examination Survey (NHANES): a program of studies designed to assess the health and nutritional status of adults and children in the United States. It combines interviews and physical examinations (CDC, 2013).

National School Lunch Program (NSBP): Is a federally assisted meal program operating in public and nonprofit private schools and residential child care institutions that provides nutritionally balanced, low-cost or free lunches to children each school day. Meals provide 1/3 of the recommended dietary allowance for children (USDA, 2012).

School Breakfast Program (SBP): Provides cash assistance to States to operate nonprofit breakfast programs in schools and residential childcare institutions. Meals provide ¼ of the recommended dietary allowance for children (USDA, 2012).

Assumptions

The curriculum was based upon the following assumptions:

Participants will be Facey Medical Foundation patients and/or their immediate family members (ex-parents, siblings, grandparents, children, etc.).
- Children participants will be overweight or obese and ages seven to eleven.
- Participants will be able to understand and read English as presented in the nutrition education, physical activity, psychology, and healthy snack preparation workshops.
- The childhood obesity prevention program will promote changes for participants becoming a healthier family through improvement in dietary choices, physical activity level, and psychological wellbeing.
- Participants will attend all of the nutrition education, physical activity, psychology, and healthy snack preparation workshops.
- Program participants will fill out the food frequency questionnaires and program evaluations honestly and to the best of their knowledge.
- No errors were made during anthropometric measurement.

**Limitations**

The curriculum has the following limitations:

- The children’s curriculum was designed for overweight or obese children, ages seven-to-eleven and is not applicable for all age groups.
- The curriculum was developed for four sessions over the course of a one-month time period and does not encompass all possible education topics.
- The Food Frequency Questionnaires (FFQ) and program evaluation forms used as evaluation of the program’s effectiveness and success were dependent on honest and accurate responses from program participants.
- The sample size for the childhood obesity prevention program was only for nine overweight children and their families.
- Human error with anthropometric measurement may affect the accuracy of data analysis.
- Anthropometric measurement did not include body fat percentage assessment but only evaluation of height, weight, and body mass index.
- Inconsistencies between what program participants actually consumed versus what they recorded on food frequency questionnaires may affect the accuracy of data analysis.
- The evaluation data collected during the first run through of the program was not evaluated or analyzed (ex- height, weight, BMI, and FFQ responses).
CHAPTER II

REVIEW OF LITERATURE

The purpose of this section is to present a review of current research regarding the nation’s childhood obesity epidemic. This research will better help educators, policy makers, and program interventionists understand how to better develop and implement effective childhood obesity prevention programs. The literature review will also assist the further development of this program curriculum. This review includes: childhood obesity prevalence, effects, contributing factors, its relationship with the Human Ecological Theory, and potential interventions for overcoming the childhood obesity epidemic.

Prevalence of Childhood Obesity

Childhood obesity has become one of the primary health concerns in today’s society and is a rising epidemic in our nation. There are multiple negative outcomes that are associated with childhood obesity including co-morbidity health conditions such as type II diabetes and cardiovascular disease as well as increased health care expenses (Anderson & Butcher, 2006). Today’s literature illustrates that childhood obesity is not just an issue within the United States, but also an international concern. All industrialized countries, excluding Japan, demonstrate an increase in the rates of adult obesity. The United States is one of the countries that is most heavily affected by the impact of childhood obesity. The rise in the United States childhood obesity appears to have begun between 1980 and 1988, and then steadily continued to increase during the 1990s (Anderson & Butcher, 2006).
Based on the body mass index (BMI) markers, obesity has increased across all age groups in the United States over the past thirty years. From 1971 to 1974, 5% of children aged two-to-nineteen years of age were obese in the US. From 1988 to 1994 the percentage of obese children practically doubled, and by 1999 to 2002 15% of US children were identified as obese (Anderson & Butcher, 2006). The rates of childhood obesity were noted to be higher in the older age groups and roughly comparable between boys and girls. Research also shows that obesity rates are higher among low-income minority children. African American children are noted to have the highest increase in obesity. The National Longitudinal Survey of Youth demonstrates that both African American and Hispanic children are more likely to be overweight than white non-Hispanic children (Anderson & Butcher, 2006).

The timing for the increase in US obesity rates is noted to have taken place most significantly after 1980. The average body mass index of obese children increased between 1999 and 2002. The increase in obesity is also observed in the adult populations. Studies show that obese children are more likely to become obese adults than normal weight children. A study conducted in the 1990s found that 52% of children that are obese at the age of three-to-six are obese at the age twenty-five, versus only 12% for underweight and normal weight children age three-to-six (Anders & Butcher, 2006). The drastic increase in obesity rates is noted to be most significant after 1980, which is why researchers postulate observing the environmental changes from that date on are most effective for the development of prevention and treatment.

**Effects of Childhood Obesity**

Childhood obesity is recognized as being the number one nutritional concern of adolescents and children in the US (Etelson, Brand, Patrick, & Shirali, 2003). There are
multiple health effects and co-morbidities that coincide with obesity including: hypertension, type II diabetes (T2DM), increased cardiovascular risks such as high cholesterol, and glucose intolerance (CDC, 2010). Other health concerns include sleep apnea, asthma, hepato-steatosis, steato-hepatitis, and psychological and behavioral disorders such as low self esteem, depression, anxiety, withdrawal from interacting with peers, and feelings of rejection (Deckelbaum & Williams, 2001).

The health risks associated with overweight and obesity are similar between children and adults. Elevated blood pressure, insulin resistance and type II diabetes, and dyslipidemia are common co-morbidities in the overweight and obese pediatric population (Deckelbaum & Williams, 2001). T2DM is now the most common form of diabetes among children and adolescents. Higher levels of plasma triglycerides and lower levels of high density lipoproteins is often common in more severe degrees of obesity.

Childhood obesity also presents a financial burden to our society. The economic burden of obesity is astronomical. Annually, childhood obesity is estimated to cost our nation three billion dollars (CDC, 2010). Promoting the development of successful childhood and adolescent obesity prevention programs can help lower the economic burden of pediatric obesity.

**Contributing Factors of Childhood Obesity**

The basic physiology of weight gain reflects a state where calories consumed exceed calories being burned or utilized by the body. Understanding the root causes of the US childhood obesity epidemic requires you to look beyond just the basic physiology of weight gain, and into the variety of factors that can influence the development of childhood obesity.
There are various factors that contribute to the national rise in childhood obesity-including: increased intake of empty calories (increased energy intake and decreased energy expenditure), increased consumption of food away from home, environmental changes (including unsafe neighborhoods that are not conducive for children to walk to school), and more sedentary lifestyles that include longer screen time (computers, TV, video games) (Anderson & Butcher, 2006). Childhood obesity is a multi-factorial health problem that requires dynamic treatment and prevention. Anderson & Butcher (2006) suggest that the most effective way to address childhood obesity is by focusing on the environment that affects a child’s energy balance.

**Caloric Intake**

Research demonstrates that children that consume more empty calories and have lower caloric expenditure and physical activity levels are more likely to be obese than other children (Anderson & Butcher, 2006). Increased consumption of sugary beverages, juice, and fast food has been linked to the increasing childhood obesity rates. Cross sectional studies have shown that people who consume diets high in fast food have a higher caloric intake and lower nutritional adequacy. Research cannot prove however causation between a diet high in fast food and obesity. Frequent intake of fast food, can therefore only be recognized as a risk factor for developing obesity. Many studies have shown a positive link between soft drink consumption and overweight. Cross sectional studies have found a link between juice consumption and overweight, but long term studies have not. Nor has a link been found between snack consumption and childhood overweight (Anderson & Butcher, 2006).

**Energy Expenditure**
Energy expenditure is achieved through three different areas: the thermogenesis of food, basal metabolic rate, and physical activity. Research shows that obese teens do not have a lower than average BMR (basal metabolic rate-energy required to maintain the body’s resting functions) illustrating that low BMR is not a significant contributing factor of childhood obesity rates. The focus of energy expenditure in the childhood obesity epidemic is, therefore, physical activity. Long term research studies have suggested that increasing physical activity levels in children yields a lower BMI (Anderson & Butcher, 2006). However, cross sectional studies have not found the same results. This discrepant result could most likely be due to the fact that body mass index is not a good indicator of adiposity.

Physical Activity

Many studies have also found a positive relationship between sedentary lifestyles/behavior and childhood obesity. Increased television time, for example, can contribute to obesity two-fold. First, the more time a child spends watching television, the less time they have to spend engaging in physical activity. Second, the more time children spend watching television, the more they are exposed to the advertising of calorie-dense, nutrient deficient snack foods, thereby increasing their desire to eat these products and eventually increase the overall intake in their diet. Research has shown that advertising can influence individual food preferences for children as young as the age of 2 (Anderson & Butcher, 2006). Between 1987 and 1993, children’s television programming had 11 percent more commercials per hour,- However this does not take into account the commercials and advertising that children are exposed to through adult programming. By contrast however, research does not find a relationship between the
consumption of snacks and BMI, implying that the energy imbalance of an obese child must come from another source. According to Anderson & Butcher (2006) studies do show that decreasing the television screen time can lower children’s BMI.

Over the years, the number of television sets within a household has also increased. During 1970, 35 percent of homes had more than one television, 6 percent had three or more, and 6 percent of sixth graders had a television in their bedroom. By comparison, in 1999, 88 percent of homes had more than one television, 60 percent had three or more televisions, and 77 percent of sixth graders had a television in their bedroom (Anderson & Butcher, 2006). The average daily screen time of television per person increased 1.5 hours per person during the 1980s, the same time frame that is recognized as being the initial incline of the childhood obesity epidemic.

**Technology**

Other forms of technological screen time that contribute to the rise in childhood obesity include video games and the computer. In 1999, children were found to spend on average 19.3 hours per week watching television, 2.5 hours in front of the computer, and 2.3 hours playing video games (Anderson & Butcher, 2006). It is recommended that children get at least 60 minutes of physical activity per day. Currently, practically 30 percent of children are not even exercising three days per week and only 17 percent of high school students report that they are getting the recommended 60 minutes per day of physical activity. Physical activity and physical education are therefore important topics that need to be addressed both in the school setting as well as in childhood overweight and obesity prevention programs (National Conference of State Legislatures, 2012).

**Other Factors**
Genetic make-up is another influential factor of childhood obesity. Studies suggest that 25-40% of BMI is genetically influenced. Endocrinological and neurological syndromes can also influence whether or not a child develops obesity. Syndromes such as Praeder Willi, Llinefelter’s, Frohlich’s, Klein-Levin, Lawrence Mood Biedl, and Mauriac however account for less than 5% of childhood obesity cases (Anderson & Butcher, 2006). Data from NHANES (the national health and nutrition examination survey) shows that obesity rates are more prevalent among African American children and low income children, suggesting that socioeconomic status in addition to ethnic background, is another contributing factor of the childhood obesity epidemic (Anderson & Butcher, 2006). Ogden, Flegal, Carroll, & Johnson, 2002, used data from the National Health and Nutrition Examination Survey which surveyed 4722 children from birth through 19 years of age (height and weight measurements taken from 1999-2000) and found that the biggest increase in childhood overweight between 1988 to 1994 and 1999 to 2000 was observed in the non-Hispanic black and Mexican American populations (Ogden, Flegal, Carroll, & Johnson, 2002). The prevalence for overweight children from 1999 to 2000 was 15.5 percent for children 12-to-19 years old, 15.3 percent for children 6-to-11 years old, and 10.4 percent for children 2-to-5 years old versus 10.5 percent, 11.3 percent, and 7.2 percent respectively from 1988 to 1994.

Regional differences have been noted in childhood obesity rates. Studies have found that children in the South and the West of the US are more likely to be overweight than children in other areas. According to Anderson & Butcher (2006), cross sectional studies have also found that children who were breast fed are less likely to become obese than children that were not, although there have been some mixed findings. The research
that looks into the effect of breastfeeding on childhood obesity has various factors that 
may contribute to this effect including: mothers having more control over how much their 
babies are fed with bottle feeding, the endocrine response to milk, and the difference in 
nutritional practices of mothers who do and don’t breastfeed (Anderson & Butcher, 2006).

The majority of the research that has been conducted to evaluate the different 
contributing factors of the childhood obesity epidemic has not been able to determine 
clear causality. Rather, most cross sectional studies show correlations between the 
obesity epidemic and different contributing factors. One of the biggest limitations of the 
research that has been conducted is the question of whether or not the timing of the 
studies matches the timing of the childhood obesity trends. Another issue is that most of 
the long term studies with a strong research design are limited to a specific group and 
area, which leaves the question of whether or not the research is broadly applicable 
across the entire childhood obesity epidemic (Anderson & Butcher, 2006).

Environmental changes are a huge concern for the development of the childhood 
obesity epidemic. Four of the most significant environmental changes include the food 
market, schools and day care, the built environment, and parents (Anderson & Butcher, 
2006). The biggest changes in the US food market that coincide with the rise in obesity 
include the increased consumption of carbonated soft drinks, the increased consumption 
of food away from home, more energy dense food available with greater convenience and 
at a lower cost, and larger portion sizes.

The percentage of food consumed away from home increased from 18 percent 
during 1977-1978 to 27 percent from 1987-1988, and up to 34 percent by 1995 
(Anderson & Butcher, 2006). Portion sizes increased 20 times during the first half of the
1980s and increased more than 60 times during the last half of the 1990s. The decrease in the cost of food has also played a role in the rise of obesity. Darius Lakdawalla and Thomas Philipson postulate that the decline in the price of food has led people to eat more, thereby contributing to the increased rates of obesity. They estimate that up to 40 percent of the adult increase in BMI since 1980 is influenced by the lower prices and growing demand for calories (Anderson & Butcher, 2006).

The price of food has also been an influential factor on the childhood obesity epidemic. Beydoun & Powell, 2012, found that food prices affect food choices, which in turn can dictate diet quality. The authors took data from the USDA Continuing Survey of Food Intakes by Individuals from (CSF II) 1994 to 1996 along with data collected from children ages two-to-nine and found that children from higher household income groups had a lower BMI and higher HEI (Healthy Eating Index). The study also found that the fruit and vegetable intake was higher in the higher income group, indicating that socioeconomic status can affect nutrition status and prevalence of childhood obesity. In the instance of higher fast food price indices, the study found that eating patterns among the higher income group reflected a higher intake of calcium, fiber, fruits and vegetables, dairy, and better overall diet quality. Some studies have found an improvement in nutritional status and eating behaviors when the cost of healthy food was lowered and the cost of unhealthy food was increased although this may not be replicated in uncontrolled environments (Beydoun & Powell, 2012).

The Center for Disease Control and Prevention (CDC) (2010b); found that for non-Hispanic white boys, of those living in households with incomes at or above 350 percent of the poverty level, 10.2 percent were obese, versus 20.7 percent of those in
households below 130 percent of the poverty level. In comparison, for non-Hispanic white girls, 10.6 percent of those living in households with incomes at or above 350 percent of the poverty level are obese versus 18.3 percent of those in households below 130 percent of the poverty level (CDC, 2010b). Interestingly, there is no noticeable trend in childhood obesity prevalence and income level for non-Hispanic black and Mexican American children. Statistics show however that most obese children are not from a low income (below 130 percent of the poverty level). Of the 12 million obese children in the United States, 24 percent are in households at or above 350 percent of the poverty level, 38 percent live between 130 and 350 percent of the poverty level, and 38 percent live below 130 percent of the poverty level (CDC, 2010b).

Technology has made a significant impact on the increasingly sedentary lifestyle of Americans. Technological advancements have left the workplace a new environment of more sedentary working conditions. In addition to less physical activity in the workplace, the amount of time spent traveling has increased, also contributing to the development of more sedentary lifestyles. Daily vehicle miles traveled per household increased to 41 miles in 1990 versus 33 miles in 1977. In 2001 daily vehicle miles traveled per household jumped up to 57 miles (Anderson & Butcher, 2006). Due to longer distances and/or unsafe neighborhoods, children are not able to walk or ride their bikes to school, thus contributing to the increased amount of household miles driven daily. Based on a national survey conducted in 2001, 53 percent of parents drive their children to school, and 38 percent of children ride the bus to school. Comparatively, 5 percent of parents said their children rode their bikes to school, and 17 percent walked. In
summary, less than a quarter of children walk or bike to school nowadays versus the two thirds who did a decade ago (Anderson & Butcher, 2006).

Changes can also be observed in the school environment. There have been marked differences in physical activity requirements as well as the types of foods and beverages served. Soft drink consumption in schools increased by 3 percent between 1977-1978 and 1994-1998. In addition to the increased consumption of soft drinks, more food has become available in schools through vending machines. Between 1994 and 2000, access to vending machines in schools increased from 61 to 67 percent in middle schools and 88 to 96 percent in high schools (Anderson & Butcher, 2006). It can be argued that these changes in the school environment have contributed to the rise in childhood obesity rates, but there is currently no research that concretely proves this relationship. Changes in physical education can be observed in schools as well. The National Association of Early Childhood Specialists in State Departments of Education found that 40 percent of elementary schools have deleted, reduced, or considered cutting recess since 1989. In addition the daily attendance for physical education has also declined, for an attendance rate of 42 percent of schools in 1991 and 29 percent in 2003 (Anderson & Butcher, 2006).

Differences in childcare also play a potential role in the obesity epidemic. According to Anderson & Butcher, 2006, there is an increased observance of less physical activity, higher consumption of sweet drinks and snacks, and more sedentary activities if children are transitioned from parental care into childcare settings. The transition of children into child care settings is a common trend in our society due to the increase in labor force participants. The increase in labor force participation however,
appears to be somewhat continuous from 1970 through the 1990s. Another difference that has taken place within the role of American parents is the more common trend of seeing both parents in the workplace. In this scenario, households more often consume pre-packaged foods and foods away from home due to the convenience and time advantage. Studies that have addressed maternal employment and the quality of children’s diets have not been able to find a relationship. A recent study, however, did show that it is not necessarily the maternal employment that affects childhood overweight and obesity but the intensity of the mother’s work. Further research is needed, however, in order to draw more firm conclusions from the relationship of maternal employment and childhood overweight and obesity (Anderson & Butcher, 2006).

Education level is another factor that contributes to the prevalence of childhood obesity. Children living in a home where the head of the household has a college degree are less likely to develop childhood obesity than children and adolescents living in homes where the head of the household has education below the collegiate level. This relationship however is not consistent across race and ethnicity (CDC, 2010a). The prevalence of childhood obesity increased at all education and income levels between 1988-1994 and 2007-2008.

Another influential factor that may contribute to childhood overweight and obesity is the dietary and physical activity behaviors of parents. If parents are less physically active, their children are more likely to be as well. In addition, if parents have poor nutrition habits, their children are more likely to develop poor nutrition habits. Research shows that children of overweight and obese parents are more likely to become
overweight and obese themselves than children of normal weight parents (Anderson & Butcher, 2006). This mere fact demonstrates the importance of childhood overweight and obesity prevention programs placing emphasis on educating the parents of overweight and obese children so that they can facilitate the implementation of a healthy lifestyle, both through diet and physical activity.

**Human Ecological Theory**

Childhood obesity is a multi-factorial health condition and has no single cause. The Human Ecology of (HET) proposed by Bronfenbrenner in 1979, is an essential component of understanding the childhood obesity epidemic and the effect that environmental impact has on this growing national health concern. This theory postulates that individual behavior and development is shaped through five interrelated environmental systems: macrosystem, exosystem, meosystem, microsystem, and chronosystem. The five environmental systems of the Human Ecological Theory are depicted below in Figure 1, and defined thereafter.

**Figure 1- Bronfenbrenner’s Human Ecological Model**
- **The Microsystem**: The settings that the individual directly interacts. These are the settings with the most direct impact on a child’s psychological and biological development (example-family and school).

- **The Meosystem**: The interrelationship between different Microsystems (example-the family interacting with the school).

- **The Exosystem**: The political, social, economic, and religious settings that affect the child through one of the Microsystems but the child is not directly involved with (example-government policies affecting the types of school lunches served).

- **The Macrosystem**: This includes the microsystem, exosystem, and the meosystem and is the most external part of the child’s environment. (Example-law, values, and customs).

- **The Chronosystem**: This encompasses the events that take place throughout time. Parents provide their children with their earliest experiences with food and eating. They therefore in large part control the food environment of their children. Parent’s eating behaviors and feeding practices shape the eating behaviors that develop in their children (Birch and Davison, 2001). Birch & Davison (2001), created the Ecological Model of Childhood Overweight depicted below in figure two. This model, closely linked with Bronfenbrenner’s HET, illustrates the environmental factors that can influence a child’s overweight condition.

Figure 2- Ecological Model of Childhood Obesity
The Ecological Model of Childhood Obesity looks at the contributing factors of overweight and obesity that extend from the individual to society (De Mattia & Denney, 2008). The different levels of this model include child characteristics and child risk factors, parenting styles and family characteristics, and community, societal, and demographic characteristics. Much like the HET, The Ecological Model of Childhood Obesity demonstrates that environment shapes behavior and plays an essential role in the development of childhood overweight and obesity. As illustrated by this revolutionary model, there are a multitude of factors that contribute to childhood overweight and obesity. The key to overweight and obesity prevention programs being effective is therefore contingent upon them being able to address these various factors.

**Interventions**

In order to address the childhood obesity epidemic, it is essential to tackle the environmental factors that have contributed to an energy imbalance and more sedentary lifestyle among US children. Parental influence is one of the environmental factors that shape a child’s eating patterns and physical activity level. The participation of parents is
vital to the success of childhood obesity prevention programs since parents play such a key role in the nutrition and lifestyle behaviors of their children (Etelson, Brand, Patrick, & Shirali, 2003). Parental participation is also contingent upon parents being able to recognize the fact that their children are overweight or obese and their health is at risk. Before you can effectively address the overweight or obesity health issue with children’s parents, you first need make sure that they are aware of the serious nutrition and health related concerns that these conditions pose.

Etelson, Brand, Patrick, & Shirali, 2003, surveyed eighty three parents of children 4-to-8 years to evaluate their knowledge about healthy eating habits, attitudes about excess weight in childhood, and perception about their child’s own weight. The study found that parents of both overweight or obese and normal weight children had a general understanding of basic nutrition and healthy food choices in regards to limiting sugar and fat intake. It also suggested that the parents that participated in the study acknowledged the health risks associated with childhood obesity but only half of the participants accurately judged their child’s weight. A key component of childhood obesity prevention programs should therefore be educating parents of their child’s overweight or obese condition and making sure that they are aware of the correlated health concerns.

In order to combat this epidemic, prevention programs should also focus on the avoidance of obesity in women of child bearing age, excessive weight gain during pregnancy, and the importance of breast feeding in lowering the prevalence of obesity in both children and adults (Deckelbaum & Williams, 2001). Deckelbaum & Williams, 2001 suggest that childhood obesity prevention efforts during childhood should focus on
avoiding pre-pubertal adiposity, providing nutrition education and engaging in daily physical activity, as well as monitoring weight increase for height. Adolescent obesity prevention in contrast should focus on maintaining healthy nutrition, continuing daily physical activity, and preventing excess weight increase after growth spurt.

There are three levels of prevention that need to be addressed in the childhood obesity epidemic: First, primordial intervention, which focuses on keeping a normal BMI throughout childhood and adolescence; second, primary prevention, which encompasses preventing overweight children from becoming obese; and third, secondary prevention, which addresses treating obese children, taking care of chronic health conditions, and working to reverse overweight and obesity (Deckelbaum & Wiliams, 2011).

The majority of efforts that have been used to fight the childhood obesity epidemic have been either family-based or school based. The focus of family-based interventions is obtaining parental support and encouraging positive change in the home environment. Family-based childhood obesity prevention programs should be focused on teaching parents how to select healthier food options and develop better food behavioral patterns. They should also emphasize the child’s ability to self-regulate their food choices (Birch & Davison, 2001). The results of non-surgical childhood obesity interventions have so far shown that long term weight reduction is challenging to achieve (Ebbeling, Pawlak, &Ludwig, 2002).

The National School Lunch Program and the National School Breakfast Program are two of the government school based programs that are working against the nations’ increasing levels of childhood obesity. The National School Lunch Program provides nutritionally balanced, free or low cost lunches to children every day in school and first
began under President Harry Truman’s National School Lunch Act in 1946 (USDA, 2012). This program requires that meals provided offer at least one third of total recommended dietary allowance for children. The National School Breakfast program in comparison is required to provide ¼ of the total recommended dietary allowance for children (USDA, 2012).

There are currently various policies under state legislature that were developed to address the concern for childhood overweight and obesity. These legislative policies are predominantly in two areas: school nutrition and nutrition education and physical activity physical education. In 2012, ten states in the US approved funding for school nutrition grants or enacted legislation that promoted student access to healthy food and beverage options. These efforts reinforced the principles of the federal Healthy Hunger Free Kids Act of 2010. These states were California, Louisiana, Florida, Maine, Mississippi, New Mexico, North Carolina, Virginia, Massachusetts, and Pennsylvania.

The Robert Wood Johnson Foundation (2012) found that multiple cities and states throughout the US have announced declining rates of childhood obesity. This is thanks, in large part, to their comprehensive action to address this national health and economic concern. New York City, Philadelphia, California, and Mississippi are some of the places that have reported declining rates of childhood obesity. California for example, made well-built nutrition standards for schools in 2007, and in 2009 the state prohibited sugar sweetened beverages. In 2012, a study found that students in California were taking in 158 less calories per day than other states with less strict nutrition standards (Robert Wood Johnson Foundation, 2012). Unfortunately, despite this success, there are still
geographic, socioeconomic, ethnic and racial disparities in childhood obesity that are occurring throughout the nation.

The literature reviewed in this chapter demonstrates the importance of addressing the national childhood obesity epidemic. Since the environment of children has such a significant effect on their nutrition status, obesity prevention programs should focus on the environmental factors that contribute to their overweight and obese condition. Research shows that school and family based prevention programs are two common approaches. Research suggests that nutrition education developed for families with overweight or obese children are created to promote healthier food choices and eating behaviors.

The curriculum presented in this thesis project is a family based approach intervention program. The program was created to encourage the following behavior changes: increase in the consumption of fruits and vegetables, decrease in the intake of sugary beverages, as well as fast and processed foods, and improvement in the variety and balance of program participant’s overall diet. The program was implemented in the family setting, highlighting the importance of the education, support, and involvement of family members for the treatment and prevention of childhood overweight and obesity.
CHAPTER III

METHODOLOGY

Childhood obesity is recognized as being the number one nutritional concern of adolescents and children in the US (Etelson, Brand, Patrick, & Shirali, 2003). The nutrition curriculum of the childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families was created to improve the nutrition knowledge of overweight and obese children ages seven to eleven years of age and their families. The curriculum was developed to encourage healthier food choices and increased physical activity level. The overall goal of the implementation of the curriculum is to lower the rates of childhood overweight and obesity in Mission Hills, California.

Curriculum Development

This project includes the nutrition education curriculum that was implemented in the family-based childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families. The program was implemented at the Facey Medical Foundation Education Department of Mission Hills, California. The nutrition education curriculum was developed for overweight and obese children ages seven-to-eleven and their families. After the author researched the many intervention and prevention programs that address childhood obesity, the second step in the development of the 5-4-3-2-1-0 Steps to Healthy Families nutrition curriculum was the selection of appropriate nutrition topics for each week that the nutrition workshops were presented (four weeks in total). The nutrition topics were selected based on common factors that influence the development of overweight and obese children, such as the overconsumption of sugary beverages,
physical inactivity, and consumption of foods high in excess fat, calories, sodium, and sugar (Anderson & Butcher, 2006). The next step was the development of the curriculum objectives. The curriculum objectives were created to assess the learning of program participants (Appendix D). The final step, before being ready for curriculum delivery, was to organize the precise and complete lesson plans (Appendix E).

**Curriculum Delivery**

The curriculum was delivered in a series of four nutrition workshops, each workshop forty-five minutes in duration, presented by a Registered Dietitian. Adults (parents) and children were each presented with separate age-appropriate nutrition curriculum lessons (Appendix E), with both parents and children covering the same nutrition topic each week. The nutrition curriculum included the following teaching tools: body mass index and growth charts, MyPlate and the food groups, appropriate portion sizes, Rethink Your Drink, health risks associated with overweight and obesity, and learning how to make healthier food choices in fast food establishments. Classes were designed to be taught at Facey Medical Foundation Patient Education Department in Mission Hills, California on Saturday mornings. Various teaching methods were used to present the nutrition workshops, including individual and group hand-on activities as well as multiple visual aids such as food models, PowerPoint presentations, and handouts.

**Data Collection**

In order to evaluate the effectiveness of the program, multiple tools were used. A Food Frequency Questionnaire (FFQ) (Appendix H) was administered at the beginning and the end of the program to assess behavior changes and improvements in food selection of program participants. Parents of the program participants filled out the FFQ
providing information on how many times a week their child/children ate certain foods including the major food groups as well as high calorie, low nutrient dense food options (Appendix H). Anthropometric measurements were taken of the children during the first and fourth week of the program to track changes in weight, height, and body mass index (BMI) (Appendix G). Physical activity logs were kept by the children’s parents each week to track their frequency of physical activity. Lastly, program evaluation forms were administered to the adult and children program participants during week four to obtain feedback on ways to improve the program for the future. The program evaluation forms were also used to obtain subjective information from program participants regarding whether or not they felt their family was healthier after participating in the program (Appendix I).

**Participants**

The study population included children ages seven-to-eleven and their families in the community of Mission Hills, California (n=9 families). All children, both male and female, had BMIs > (then put the number), which categorized them as either overweight or obese. Program participants were members of the Mission Hills Facey Medical Foundation, which is located in the San Fernando Valley area of Los Angeles, California.

**Curriculum Development for Future**

After the initial trial delivery of the 5-4-3-2-1-0 Steps to Healthy Families program (Appendix D), a panel of three experts was used to provide feedback on ways to improve the curriculum and format of the childhood obesity prevention program for future program delivery. A survey (Appendix A-C) was administered to each of the three experts within the professional field. The survey questions were done in essay format and
administered through Surveymonkey.com. The feedback obtained from these professionals will be available to use for future improvement to the program 5-4-3-2-1-0 Steps to Healthy Families.

The first panelist expert, Linda Luna-Franks: program director of Cedar Sinai Medical Center’s Health Habits for Healthy Kids Childhood Obesity Prevention Program, was used to assess the quality and effectiveness of the program curriculum as a whole. The second expert panelist, Katie Klier: Registered Dietitian and Childhood and Adolescent Weight Management Certified at Children’s Hospital of Los Angeles, was selected to evaluate the nutrition content of 5-4-3-2-1-0 Steps to Healthy Families curriculum. Finally, the third expert panelist, Aimee Atkinson: 4th grade elementary school teacher-Master’s in Elementary Education, provided feedback on the children’s education content of the program curriculum. Each expert panelist was provided the outline of the childhood obesity prevention program along with their area specific survey questions.

The childhood obesity prevention program expert suggested that the program curriculum place more emphasis on implementing healthy living by incorporating more activities and discussions. Additionally it was suggested that the program had a more detailed outline of contributing factors to childhood obesity to program participants and that the program had separate goals for the children and adult participants. The childhood obesity prevention program expert also suggested that the activities were shorter in duration for children (10 to 15 minutes versus 45 minutes) in order to keep the children engaged (Appendix B).
The nutrition expert stated that all of the nutrition topics covered in the curriculum were relevant to childhood obesity prevention but advised placing more emphasis on specific time recommendations for physical activity and screen time. The physical activities implemented were recognized as being age specific and it was recommended to have volunteers or staff during the circuit training to keep the kids motivated as well as possibly considering hip hop dance as a physical activity to incorporate into the program. The nutrition expert agreed that she felt the program duration was adequate for program participants to develop basic nutrition knowledge and understanding of how to make healthy family choices to prevent/treat childhood obesity and stated that she would implement the curriculum in her facility. She also suggested that it may be beneficial to add more information on reading food labels to the nutrition curriculum along with healthy cooking and substitution ideas for the parent’s classes and information on how to handle practical food situations (Appendix A).

The education expert stated that the curriculum was age specific for children aged seven-to-eleven years of age but suggested that adding visuals to the presentations might be beneficial to the younger program participants. It was also proposed that the time allocated to each lesson was sufficient but to allow time for the program participants to talk in between presenting new topics so that they would have time to reflect back on what they had just learned. The education expert also reflected that the program equipment and tools supported the learning objectives, and suggested that it may be a positive addition to the childhood obesity prevention program to have an interactive blog where parents and children could ask questions, post progress in their healthy habits, and interact and encourage each other (Appendix C).
CHAPTER IV

RESULTS

The childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Living was created for nine overweight and obese children ages seven-to-eleven, and their families, in the Mission Hills community of California (Appendix D).

The finalized curriculum contains the following nutrition information: body mass index and growth charts, MyPlate and the food groups, appropriate portion sizes, Rethink Your Drink, health risks associated with overweight and obesity, and learning how to make healthier food choices in fast food establishments.

The program was implemented through the Facey Medical Foundation Patient Education department in Mission Hills, California. During the run through of the program, three hour sessions were conducted once a week over the course of four weeks. Each session included nutrition, physical activity, healthy snack preparation, and child psychology workshops. The curriculum that was developed for this thesis project was used in the nutrition workshops of the 5-4-3-2-1-0 Steps to Healthy Families program.

The expert panel evaluation (Appendix A-C), as a formative evaluation tool, will set the stage for what will help in the development of a modified version of the next iteration of the 5-4-3-2-1-0 Steps to Healthy Families program.

The continued improvement and delivery of this type of program will help accomplish the overarching goal for the development of this nutrition curriculum, which is to facilitate healthier food choices and behavior patterns.
CHAPTER V

DISCUSSION

The nutrition curriculum of the childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families was created to improve the nutrition knowledge of overweight and obese children ages seven-to-eleven years of age and their families. The curriculum was developed to encourage healthier food choices and increased physical activity level. The overall goal of the curriculum and program is to lower the rates of childhood overweight and obesity in the San Fernando Valley area of Los Angeles, California.

Researchers have found that because childhood obesity is a multi-factorial disease, prevention efforts need to be built to address the various factors that contribute to childhood obesity in order for them to be effective. Intervention programs need to address poverty level, sedentary lifestyle, poor access to places for physical activity, education and encouragement for families, and the child’s food environment (LACDPH, 2007). Childhood obesity prevention programs should also address the increased consumption of sugary beverages, juice, and fast food since researchers have found a link between childhood obesity rates and the increased consumption of these items (Anderson & Butcher, 2006). The 5-4-3-2-1-0 Steps to Healthy Families program was developed with these tenets in mind.

Parental participation also plays a significant role in the effectiveness of childhood obesity prevention programs since parents play such an influential role in their child’s nutrition (Etelson, Brand, Patrick, & Shirali, 2003). Parental participation, however, is contingent upon parents being able to recognize the fact that their children
are overweight or obese and their health is at risk. The focus of family based interventions is obtaining parental support and encouraging positive change in the home environment. Family-based childhood obesity prevention programs should be focused on teaching parents how to select healthier food options and develop better food behavioral patterns. They should also emphasize the child’s ability to self-regulate their food choices (Birch & Davison, 2001).

The childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families focuses on many of the above-mentioned factors that contribute to childhood obesity. Research shows that this is essential in order for prevention programs to be effective. This program will help address childhood obesity because it uses a family based approach, which focuses on the family’s role in the behavior and eating patterns of the overweight and obese child. This program curriculum will, therefore, add to the family behavior based childhood obesity prevention programs that are currently available. As a result, this curriculum may help reduce the obesity rates in Mission Hills, California. Additionally, this program may be a useful childhood obesity prevention model for other communities since it addresses several of the important topics necessary for effective childhood obesity prevention programs as evidenced by the research referenced above.

After consulting three experts from the professional field to provide feedback on how to further develop the program, there is now future opportunity for their opinions and suggestions to be utilized and implemented. This feedback can be used to strengthen the effectiveness of the childhood obesity prevention program 5-4-3-2-1-0 Steps to Healthy Families. In addition to this, it is necessary to collect data to help evaluate the effectiveness of this type of program.
Recommendation for Further Research

There was important statistical data collected for the initial 5-4-3-2-1-0 Steps to Healthy Families program. The current project focused on the development of the program; however, future research could and should analyze this and future program data. Evaluating the effectiveness of this program curriculum is necessary for determining whether or not the nutrition education, physical activity, healthy snack preparation, and psychology sessions were effective in changing participant’s physical activity level and eating behavior. Further research is needed to assess the psychological impact of childhood overweight and obesity and whether or not the sessions with the child psychologist in the 5-4-3-2-1-0 Steps to Healthy Families Childhood Obesity Prevention program improved the psychological well being of child and adult program participants. Additionally, dietary intake of program participants should be assessed further beyond the food frequency questionnaires to determine whether or not there was improvement in program participant’s eating behavior. Using further research to address the above mentioned areas can contribute to the assessment, evaluation, and improvement of this curriculum.

Limitations

The primary limitation of this project was that the effectiveness of the program curriculum was not evaluated for its effectiveness. Participants’ dietary intake was collected through food frequency questionnaires, and anthropometric measurements were obtained but the results were not analyzed. Program evaluation forms were also distributed to child and adult program participants, but again, this data was not evaluated. Another limitation is that the program curriculum was created for four sessions over the
course of a one-month time period. This small time frame does not allow for the evaluation of long term effectiveness of the childhood obesity prevention program and offers a shorter amount of time to cover all possible nutrition and physical activity education topics. Additionally, the curriculum was created for a small sample size of overweight and obese children age seven-to-eleven and their families (9 families total, n=9) and may not be generalizeable to the entire population; further, it was designed for a sample population for a small geographic region within the San Fernando area of Los Angeles, California. Therefore, its use and effectiveness cannot be evaluated for other populations. Another limitation of the curriculum was that it was not culturally sensitive to the target population. Incorporating culturally sensitive food in the healthy snack preparation workshops may improve program participant’s receptivity to the material as well as develop program sustainability. Program sustainability could also be improved in the future if follow up surveys were administered to program participants to track their progress and long term maintenance of healthy behavior changes.

**Implications**

This project can offer benefits to overweight and obese children ages seven-to-eleven and their families by providing nutrition education, healthy snack preparation, psychology, and physical activity sessions that will give program participants the tools that they need to make healthier food choices and increase their physical activity levels. The aim of this project was to encourage overweight and obese children and their families to develop healthier food and physical activity behavior patterns, with the ultimate goal of reducing childhood obesity rates in this community. Upon evaluation, if this curriculum is found to be helpful in lowering overweight and obesity rates, it should
be implemented in other communities across the United States, thereby providing a tool aimed at lowering obesity rates across the entire nation, which could ultimately contribute to lowering the annual health care cost, and decreasing occurrence of obesity co-morbid health conditions.

Conclusion

The US childhood obesity epidemic has a trajectory that is astronomical. Repercussions of this epidemic extend from the individual to society as a whole and need to be addressed through preventative efforts. Childhood obesity is a multi-factorial condition that has various contributing factors including unhealthy food habits and inadequate physical activity levels. The purpose of this childhood obesity prevention program curriculum was to improve program participant’s food and physical activity levels, thereby lowering the prevalence of childhood obesity in the targeted community of Mission Hills, California, and decreasing the chronic co-morbid health conditions that develop in the setting of obesity into adulthood.
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APPENDIX A

Program Survey Questions

Nutrition Content Specific Questions

Expert Panelist: Katie Klier, Childhood and Adolescent Weight Management Certified, Registered Dietitian at Children’s Hospital of Los Angeles

1. Are the nutrition topics addressed relevant to childhood obesity prevention? Please explain.

☐ Yes ☐ No
Comments (or Please Explain)

________________________________________________________________________
________________________________________________________________________

2. Do you feel the nutrition education material offers a proper balance between key nutrition topics for childhood obesity prevention? (The food groups, MyPlate, portion control, rethink your drink, physical activity/decreasing screen time (i.e. TV, computer, video games), and healthy snack preparation).

☐ Yes ☐ No
Comments (or Please Explain)

________________________________________________________________________
________________________________________________________________________

3. Are the physical activities implemented in the program age-appropriate/specific?
4. Would you implement this nutrition education in your childhood obesity prevention program/facility?

☐ Yes    ☐ No
Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

5. Do you feel that the program duration is adequate for program participants to develop basic nutrition knowledge and understanding of how to make healthy family choices to prevent/treat childhood obesity?

☐ Yes    ☐ No
Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________
6. Is the time allocated to each nutrition lesson sufficient, excessive, or inadequate? Please explain.

☐ Yes ☐ No
Comments (or Please Explain)
________________________________________________________________________
________________________________________________________________________

7. Are there areas of the nutrition education (i.e. specific courses or learning objectives) that need to be revised, removed or added to the program? Please specify, providing a rationale where necessary.

☐ Yes ☐ No
Comments (or Please Explain)
________________________________________________________________________
________________________________________________________________________
APPENDIX B

Prevention Program Specific Questions

Expert Panelist: Linda Luna Franks, Program Director of Cedar Siani Medical Center’s Healthy Habits for Healthy Kids Childhood Obesity Prevention Program

1. Do you feel that the program duration is adequate for program participants to develop basic nutrition knowledge and understanding of how to make healthy family choices to prevent/treat childhood obesity?

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________
________________________________________________________________________

2. Does the program accurately outline contributing factors to childhood obesity and different prevention efforts that families can make? If not, what should be added or changed?

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________
________________________________________________________________________

3. Are the educational components of the program effective for childhood obesity prevention?
4. Does the program have specific goals and objectives that concentrate on childhood obesity prevention?

☐ Yes    ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________


5. Do you feel that the program offers a proper balance between nutrition education, child psychology, physical activity, and healthy snack preparation?

☐ Yes    ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________
6. Would you implement the program curriculum in your classroom or childhood obesity prevention program/facility?

☐ Yes       ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

7. Do you feel that the methods of evaluation used for this program are appropriate (food frequency questionnaire, anthropometric assessment, program evaluation forms)? Please explain.

☐ Yes       ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________
APPENDIX C

Curriculum/Education Specific Questions

Expert Panelist: Aimee Atkinson, 4th grade teacher

1. Is the education material/program curriculum age specific for adults and children 7 to 11 years of age?

☐ Yes ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

2. Would you implement the child curriculum in your classroom or childhood obesity prevention program/facility?

☐ Yes ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

3. Is the time allocated to each lesson sufficient, excessive, or inadequate? Please explain.

☐ Yes ☐ No
4. Are there areas of the curriculum (i.e. specific courses or learning objectives) that need to be revised, removed or added to the program? Please specify, providing a rationale where necessary.

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

5. Are there any lessons that contain learning objectives not particularly relevant to the program? Please specify, providing a rationale where necessary.

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

6. Do you feel that the tools, equipment and/or supplies listed for practical components of the curriculum (if applicable) are satisfactory for program delivery (i.e. do they support the learning objectives of the program)? Please explain.
7. Do you feel there is adequate learning resources (i.e. print media, audio-visual materials, etc?) provided for program delivery and to actively engage students? Please explain.

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________

8. Are there specialized equipment, textbooks, software or other resources which you feel are not listed but would strengthen the delivery of this program? Please specify, providing a rationale where necessary.

☐ Yes  ☐ No

Comments (or Please Explain)

________________________________________________________________________

________________________________________________________________________
APPENDIX D

5-4-3-2-1-0 Steps to Healthy Families Program Summary

Program Overview

5 steps, 4 weeks, and 3 hours that you won’t want 2 miss with your little 1

Learn the 5-4-3-2-1-0 Steps to Healthier Living

Your childhood shouldn’t be spent snacking in front of the television.

Do you want to inspire your child to make healthy decisions in their life? Now you can! This free 4-day, three hour class (once a week over 4 weeks) gives you and your child the chance to participate in a fun program that teaches nutrition and fitness. Designed for children ages 7 to 11, this creative & interactive program will keep your child interested in nutrition and regular physical activity. We’ll teach you and your child the 5-4-3-2-1-0 steps to healthier living:

5 Fruits and Vegetables
4 Glasses of Water
3 Servings of Dairy
2 Hours or Less of TV
1 Hour of Physical Activity
0 Sugary Drinks

Each day of the course includes lessons on:
• Nutrition facts and trivia
• Exploring feelings and changing behaviors
• Physical activity for the whole family
• Preparing healthy snacks
This free class is taught by a Registered Dietitian and Psychologist specializing in pediatrics.

Program Goals and Objectives

At the end of the Facey Medical Group Pediatric Healthy Living program, participants will be able to:
1. Describe the different food groups
2. Show how to set SMART goals (specific, measurable, achievable, realistic, time-based)
3. Apply the following principles of intuitive eating:
   a. Reject the diet mentality
   b. Honor your hunger
   c. Make peace with food
   d. Challenge the food police
   e. Respect your fullness
   f. Discover the satisfaction factor
   g. Honor your feelings without using food
   h. Respect your body
   i. Exercise-feel the difference
   j. Honor your health
4. Explain the plate method
5. Show how to use healthy food choices in fast food restaurants
6. Determine the nutrient content of foods by reading nutrition facts labels
7. Analyze the content of sugar in different beverages
8. Describe the following sensory and visual aspects of food
   a. Taste
   b. Smell
   c. Texture
   d. Color
   e. Aroma
   f. Flavor
   g. Temperature, etc.
9. Explain the difference between carbohydrates, fat, and protein
10. Outline the benefits of physical activity and its multiple benefits
11. Name various physical activities that can be practiced indoors and outdoors
12. Recognize a standard portion size
13. Show a continued interest in health and nutrition (program sustainability)

**Program Budget**

Key: * = One-time expense

**Physical Activity:**
- **Week 1:**
  - Family Yoga

<table>
<thead>
<tr>
<th>Materials needed</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Family Yoga DVD with Rodney Yee</td>
<td>*$14.98 at Target=$14.98</td>
</tr>
<tr>
<td></td>
<td>Total Cost= $14.98</td>
</tr>
</tbody>
</table>

- **Week 2:**
  - Circuit/ Relay Training Part 1

<table>
<thead>
<tr>
<th>Materials at Facey</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Posters for different stations (3 total)</td>
<td>*Target $.69 x 3=$2.07</td>
</tr>
<tr>
<td>10 Jump ropes</td>
<td>$0</td>
</tr>
<tr>
<td>1 Exercise ball</td>
<td>$0</td>
</tr>
<tr>
<td>30 Resistance Bands (1 per participant)</td>
<td>$0</td>
</tr>
<tr>
<td>Materials needed</td>
<td>Cost</td>
</tr>
<tr>
<td>None</td>
<td>$0</td>
</tr>
<tr>
<td></td>
<td>Total Cost=$2.07</td>
</tr>
</tbody>
</table>

- **Week 3:**
  - Circuit/Relay Training Part 2

<table>
<thead>
<tr>
<th>Materials at Facey</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters for different stations (3 total)</td>
<td>$0 (Reuse backside from week 3)</td>
</tr>
</tbody>
</table>
Bosu Core Ball $0
10 Water bottles filled with sand to be used as dumbbells $0

Materials needed Cost
*10 Hula hoops *$1 each at Dollar Tree= $10

Total Cost=$10

- Week 4:
  Football & Basketball

<table>
<thead>
<tr>
<th>Materials at Facey</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Football</td>
<td>$0</td>
</tr>
<tr>
<td>4 Goal line cones</td>
<td>$0</td>
</tr>
<tr>
<td>2 mini basketball nets &amp; basketballs</td>
<td>$0</td>
</tr>
</tbody>
</table>

Materials needed Cost
None $0

Total Cost=$0
Total Cost=$0

Activity Total Cost: $29.55

Snacks:
- Week 1:
  Fruit Yogurt Parfaits

Ingredients
- 10 C low fat vanilla & strawberry yogurt
- 5C assorted berries frozen (defrost in the fridge before serving)
- 4 bananas (diced)
- 10C Low fat granola
- 30 Cups
- 30 spoons
- Serving size: 30

### Materials needed

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>10C Nonfat vanilla &amp; strawberry yogurt</td>
<td>Vons $3.69 per 32 oz. x 2 = $7.38</td>
</tr>
<tr>
<td>5C assorted frozen berries</td>
<td>Vons $5.79 per 32 oz. x 2 = $11.58</td>
</tr>
<tr>
<td>4 bananas</td>
<td>Vons $.40 cents each x 4 = $1.60</td>
</tr>
<tr>
<td>30 cups</td>
<td>Vons $3.89 per 100 count 5oz paper cups = $3.89</td>
</tr>
<tr>
<td>30 spoons</td>
<td>Vons $1.09 per 24 counts x 2 = $2.18</td>
</tr>
<tr>
<td><strong>Total Cost</strong></td>
<td><strong>$26.63</strong></td>
</tr>
</tbody>
</table>

### Week 2:

**Turkey Hummus Wrap**

**Ingredients**

- 15 6in. whole wheat tortillas, halved
- 2C shredded carrots
- 15 slices of lean, low sodium turkey, halved
- 30 Tbsp. humus
- 2C cherry tomatoes
- 2C sliced cucumbers
- napkins (leftover from week 1)
- Serving size: 30

### Materials needed

<table>
<thead>
<tr>
<th>Item</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>15 6in. whole wheat tortillas, halved</td>
<td>Vons $3.34 per package = $3.34</td>
</tr>
<tr>
<td>2C shredded carrots</td>
<td>Vons $1.00 per 8 oz., x 2 = $2.00</td>
</tr>
<tr>
<td>15 slices of lean, low sodium turkey, halved</td>
<td>Vons $5.19 per 10 oz. x 2 = $10.38</td>
</tr>
<tr>
<td>30 Tbsp. humus</td>
<td>Vons $3.99 per oz = $3.99</td>
</tr>
</tbody>
</table>
2C cherry tomatoes  Vons $3.00 per 10 oz.=$3.00
2C sliced cucumbers  Vons $1.00 per cucumber=$1.00
Napkins  Vons $1.00 per 200 count= $1.00

Total Cost= $24.71

- Week 3:
  Popcorn and Fruit Trail Mix
  Ingredients
  - 1C Dried cranberries
  - 2C mini pretzels
  - 4C fat free popcorn
  - 2C whole grain cheerio’s
  - 1C dark chocolate chips
  - 1 large mixing bowl
  - 30 small paper cups
  - Servings: 30

Directions

1. Toss all the ingredients into a resalable container.
2. To keep the candies from melting, store in a dry and cool place.

<table>
<thead>
<tr>
<th>Materials needed</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>1C dried cranberries</td>
<td>Vons $2.00 per 6 oz.= $2.00</td>
</tr>
<tr>
<td>2C mini pretzels</td>
<td>Vons $2.19 per 15 oz. = $2.00</td>
</tr>
<tr>
<td>4C fat free popcorn</td>
<td>Vons $2.50 per 3 oz. = $2.50</td>
</tr>
<tr>
<td>2C whole grain cheerios</td>
<td>Vons $5.49 per 10 oz. box = $5.49</td>
</tr>
<tr>
<td>1C dark chocolate chips</td>
<td>Vons $3.49 per 12 oz. = $3.49</td>
</tr>
<tr>
<td>*1 large mixing bowl</td>
<td>*$1 at dollar store= $1</td>
</tr>
<tr>
<td>30 small paper cups</td>
<td>Vons $3.89 per 100 count 5oz paper cups= $3.89</td>
</tr>
<tr>
<td></td>
<td>Total Cost= $20.37</td>
</tr>
</tbody>
</table>

- Week 4:
  Fruit, Vegetable, and Cheese Kabobs
Ingredients
- Fun shaped cookie cutters
- Kabob sticks
- Wax paper
- Strawberries
- Blueberries
- Low fat mozzarella cheese
- Low fat cheddar cheese
- Honey dew melon
- Apple wedges (3 apples)
- 2 Bananas
- Servings: 30

<table>
<thead>
<tr>
<th>Materials needed</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>*Fun shaped cookie cutters</td>
<td>*Dollar Tree $1 x 2=$2</td>
</tr>
<tr>
<td>Kabob sticks</td>
<td>Vons $2.19 per package=$2.19</td>
</tr>
<tr>
<td>Wax paper</td>
<td>Vons $2.19 per box=$2.19</td>
</tr>
<tr>
<td>Strawberries</td>
<td>Vons $3.89 per 1 lb.=3.89</td>
</tr>
<tr>
<td>Blueberries</td>
<td>Vons $2.99 per pint=2.99</td>
</tr>
<tr>
<td>1 cucumber</td>
<td>Vons $1.50 each=1.50</td>
</tr>
<tr>
<td>2 Bell peppers (1 red, 1 green)</td>
<td>Vons $.98 red bp, $2.19 green bp=$3.17</td>
</tr>
<tr>
<td>Low fat mozzarella cheese</td>
<td>Vons $4.79 per 12 oz.=4.79</td>
</tr>
<tr>
<td>Low fat cheddar cheese</td>
<td>Vons $4.79 per 12 oz.=4.79</td>
</tr>
<tr>
<td>Honey dew melon</td>
<td>1 melon, Vons $4.39 each=4.39</td>
</tr>
<tr>
<td>Apple wedges (3 apples)</td>
<td>Vons gala apples $.88 cents each x 3= $2.64</td>
</tr>
<tr>
<td>2 Bananas</td>
<td>Vons $.40 cents each x 2=.80</td>
</tr>
</tbody>
</table>

Total Cost=$35.34

Cost Break Down
*Fixed Expense
Physical Activity:
- Family Yoga DVD $14.98
<table>
<thead>
<tr>
<th>Item Description</th>
<th>Cost Information</th>
</tr>
</thead>
<tbody>
<tr>
<td>Posters for circuit training $2.07</td>
<td></td>
</tr>
<tr>
<td>10 hula hoops $10</td>
<td></td>
</tr>
<tr>
<td><strong>Snacks:</strong></td>
<td></td>
</tr>
<tr>
<td>Large mixing bowl $1</td>
<td></td>
</tr>
<tr>
<td>Fun shaped cookie cutters $2</td>
<td></td>
</tr>
<tr>
<td><strong>Sugar Presentation:</strong></td>
<td></td>
</tr>
<tr>
<td>10 lb sugar bag $5.99</td>
<td></td>
</tr>
<tr>
<td>Plastic cups/clear $3.99 (40 count)</td>
<td></td>
</tr>
<tr>
<td>Total= $30.05 x tax (.0925)= 43.73</td>
<td></td>
</tr>
<tr>
<td>Total Fixed Expense= $43.73</td>
<td></td>
</tr>
<tr>
<td><strong>Recurring Expenses</strong></td>
<td></td>
</tr>
<tr>
<td>Week 1: $26.63 x tax (.0925)= $29.09</td>
<td></td>
</tr>
<tr>
<td>Week 2: $24.71 x tax (.0925)= $26.99</td>
<td></td>
</tr>
<tr>
<td>Week 3: $20.37 x tax (.0925)= $22.25</td>
<td></td>
</tr>
<tr>
<td>Week 4: $35.34 x tax (.0925)= $38.61</td>
<td></td>
</tr>
<tr>
<td>Total recurring expense per education session=$116.94</td>
<td></td>
</tr>
<tr>
<td><strong>Annual Expense</strong>                                    7 sessions per year</td>
<td></td>
</tr>
<tr>
<td>Cost of 1 session= x 7= $818.57</td>
<td></td>
</tr>
<tr>
<td>Annual expense= $818.57</td>
<td></td>
</tr>
<tr>
<td><strong>How many patients served per year</strong></td>
<td></td>
</tr>
<tr>
<td>210 patients served per year (including family members)</td>
<td></td>
</tr>
<tr>
<td>70 patients served per year (including only pediatric patients)</td>
<td></td>
</tr>
<tr>
<td><strong>Cost to serve 1 patient per session</strong></td>
<td></td>
</tr>
<tr>
<td>$3.90 per patient (30 patients per session including family members)</td>
<td></td>
</tr>
<tr>
<td>$11.69 per pediatric patient (10 patients only including pediatric patients)</td>
<td></td>
</tr>
</tbody>
</table>
## Additional Expenses (If Possible)

<table>
<thead>
<tr>
<th>Materials Needed</th>
<th>Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pedometers</td>
<td>$1.29 per 250 count= $322.50 x .0925 tax +</td>
</tr>
<tr>
<td></td>
<td>$5.95 S &amp; H= $358.28</td>
</tr>
<tr>
<td>Seeds from America the Beautiful Fund</td>
<td>Shipping &amp; handling $14.95 per first set of</td>
</tr>
<tr>
<td></td>
<td>100= $14.95=$14.95</td>
</tr>
<tr>
<td>Total Additional Annual Cost</td>
<td>$373.23</td>
</tr>
</tbody>
</table>
**APPENDIX E**

**Program Curriculum**

Week 1: Health Conditions & Fruits & Vegetables

<table>
<thead>
<tr>
<th>Week 1: Time Schedule</th>
<th>Topic</th>
<th>Materials Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30-9:45 AM</td>
<td>Weigh participants as they arrive, calculate their BMI, and give the information to parent’s for the nutrition class</td>
<td>• 1 classroom&lt;br&gt;• Pencils&lt;br&gt;• Food frequency questionnaire&lt;br&gt;• Scale</td>
</tr>
<tr>
<td></td>
<td>Introduce 5-4-3-2-1-0 Steps to Healthy Living Program. Briefly discuss program goals and objectives</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Introduce instructors (RD &amp; psychologist), &amp; have families briefly introduce themselves</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Administer program pre-test (food frequency questionnaire)</td>
<td></td>
</tr>
<tr>
<td>9:45-9:50 AM</td>
<td>Have the kids and parents split up.</td>
<td>• 2 classrooms</td>
</tr>
<tr>
<td>5min-switch rooms</td>
<td></td>
<td></td>
</tr>
<tr>
<td>9:50-10:35 AM</td>
<td>Parent’s Nutrition Education: 1) Health conditions associated with diet</td>
<td>• Power point presentation &amp; projector&lt;br&gt;• 1 classroom</td>
</tr>
<tr>
<td>45min-curriculum</td>
<td>Heart Disease HTN</td>
<td></td>
</tr>
</tbody>
</table>
DM

2) How to interpret lab values

Triglycerides
Cholesterol (LDL & HDL)

3) Ways to stay healthy

a) Prevention/treatment of heart disease & HTN

b) Keep BP in healthy range
c) Physical Activity
d) Maintain healthy body weight

4) Understanding growth charts

* Have parent’s plot their child’s BMI on a CDC growth chart

5) Introduce F/V

6) Explain importance of fruits and vegetables

7) Review portion sizes

Discuss with parents ways to find affordable F & V

Kids Behavioral Health Education:
Discuss being in the class and how they feel about it.
Personal experiences of someone in the family with a health condition associated with obesity.

How does it affect the

- Handout for children’s height and weight and directions on how to plot/interpret growth charts
- BMI growth charts

- How to Buy Affordable F & V handout

- 1 classroom
- White board
- White board markers
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity Details</th>
<th>Location</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:35-10:40 AM</td>
<td>Have the kids and parents return to Room 1 for physical activity</td>
<td>1 classroom</td>
</tr>
<tr>
<td>10:40-11:10 AM</td>
<td>Football, Basketball, Frisbee</td>
<td>1 classroom, 1 Football, 4 goalie cones, 2 mini basketball nets and balls, 2 Frisbees</td>
</tr>
<tr>
<td>11:10-11:15 AM</td>
<td>Have the kids and parents split up.</td>
<td>2 classrooms</td>
</tr>
</tbody>
</table>
| 11:15 AM-12:00 PM | Kid’s Nutrition Education  
1) Who do you think is healthy?  
*Have the kids view the pictures of different people and say who they feel is healthy and why  
2) What does it mean to be healthy?  
*Make a list and discuss with the class  
3) What are different things you can do to stay healthy? | Power point presentation & projector, 1 classroom |
**Parents Behavioral Health Education:**

Discuss being in the class and how they feel about it.

Personal experiences of someone in the family with a health condition associated with obesity.

How does it affect the family; emotions, cost, stress.

Fears and Guilt associated with having children with obesity.

Introduce: Intuitive Eating Setting Goals.

**12:00-12:20 PM**  
Fruit, Vegetable, and Ingredients

- F & V activity handout
- 1 classroom
- White board
- White board markers
- Food voice activity handout
<table>
<thead>
<tr>
<th>20min-snack</th>
<th>Cheese Kabobs:</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Introduce fruit, vegetable, and cheese kabobs as the healthy snack of the week</td>
</tr>
<tr>
<td></td>
<td>Demonstrate how to make the fruit, vegetable, and cheese kabobs and describe each ingredient &amp; its nutritious benefits</td>
</tr>
<tr>
<td></td>
<td>Have the kids and parents make their own healthy snack together</td>
</tr>
<tr>
<td></td>
<td>20 Fun shaped cookie cutters</td>
</tr>
<tr>
<td></td>
<td>35 Kabob sticks</td>
</tr>
<tr>
<td></td>
<td>1 box of wax paper</td>
</tr>
<tr>
<td></td>
<td>2 lb. of strawberries</td>
</tr>
<tr>
<td></td>
<td>1 pint of blueberries</td>
</tr>
<tr>
<td></td>
<td>12 oz. Low fat mozzarella cheese</td>
</tr>
<tr>
<td></td>
<td>12 oz. Low fat cheddar cheese</td>
</tr>
<tr>
<td></td>
<td>1 Honey dew melon</td>
</tr>
<tr>
<td></td>
<td>Apple wedges (3 apples)</td>
</tr>
<tr>
<td></td>
<td>3 Bananas</td>
</tr>
<tr>
<td></td>
<td>1 cucumber</td>
</tr>
<tr>
<td></td>
<td>3 bell peppers</td>
</tr>
</tbody>
</table>

Serves: 35
Serving size: 1 kabob stick

<table>
<thead>
<tr>
<th>12:20-12:30 PM</th>
<th>Have parents and kids create F &amp; V specific goals that they can work on for the week</th>
</tr>
</thead>
<tbody>
<tr>
<td>10min-closing and goal setting</td>
<td>Give the kids and parents activity log sheets to track their physical activity for the week</td>
</tr>
<tr>
<td></td>
<td>Pens/pencils</td>
</tr>
<tr>
<td></td>
<td>My Pyramid Fruit &amp; Vegetable Goal Sheet</td>
</tr>
<tr>
<td></td>
<td>Activity logs</td>
</tr>
<tr>
<td></td>
<td>Fruit and vegetable challenge handout (homework)</td>
</tr>
</tbody>
</table>

Week 2: MyPlate with CHO, PRO, and Fat

<table>
<thead>
<tr>
<th>Week 2: Time Schedule</th>
<th>Topic</th>
<th>Materials Needed</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:30-9:45 AM</td>
<td>Review goals, activity logs, and take home activities from week 1</td>
<td>1 classroom</td>
</tr>
<tr>
<td>15min-Review goals as a</td>
<td></td>
<td>Goal sheets</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Activity logs</td>
</tr>
</tbody>
</table>


<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
<tbody>
<tr>
<td>9:45-9:50 AM</td>
<td>Have the kids and parents switch rooms.</td>
</tr>
<tr>
<td>5min-switch rooms</td>
<td></td>
</tr>
<tr>
<td>9:50-10:35 AM</td>
<td>Parent’s Nutrition Education:</td>
</tr>
<tr>
<td>45min-curriculum</td>
<td>1) Protein group : Discuss its importance Review portion sizes</td>
</tr>
<tr>
<td></td>
<td>2)CHO:                      Discuss its importance Review portion sizes</td>
</tr>
<tr>
<td></td>
<td>Discuss the benefits of whole grains &amp; fiber</td>
</tr>
<tr>
<td></td>
<td>3)Handout: Tips to help you eat whole grains</td>
</tr>
<tr>
<td></td>
<td>4)Introduce MyPlate</td>
</tr>
<tr>
<td></td>
<td>MyPlate activity with food models. Have the parents use the food models to build a typical meal that they would eat using the MyPlate method.</td>
</tr>
<tr>
<td>Kid’s Nutrition Education:</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1) Introduce MyPlate</td>
</tr>
<tr>
<td></td>
<td>MyPlate activity with food models.</td>
</tr>
</tbody>
</table>
models. Have the kids use the food models to build a typical meal that they would eat using the MyPlate method.

**MyPlate coloring activity.** Have the kids color their plate using the MyPlate method with different foods that they normally eat, as well as different foods that they would like to try.

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity Description</th>
<th>Materials</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:35-10:40 AM</td>
<td>Have the kids and parents return to one classroom for physical activity</td>
<td>• 1 classroom</td>
</tr>
<tr>
<td>10:40-11:10 AM</td>
<td>Circuit/Relay Training Part 1</td>
<td>• 1 classroom&lt;br&gt;• 10 jump ropes&lt;br&gt;• 1 exercise ball&lt;br&gt;• 30 resistance bands (1 per participant)&lt;br&gt;• Posters for different stations</td>
</tr>
<tr>
<td>11:10-11:15AM</td>
<td>Have the kids and parents switch rooms.</td>
<td>• 2 classrooms</td>
</tr>
<tr>
<td>11:15 AM-12:00 PM</td>
<td>Behavioral Health Education:</td>
<td>• White board&lt;br&gt; • White board markers</td>
</tr>
<tr>
<td>12:00-12:20 PM</td>
<td>Popcorn &amp; Fruit Trail Mix: Introduce popcorn &amp; fruit</td>
<td>• Ingredients&lt;br&gt;• 1/8 cup dried cranberries per</td>
</tr>
<tr>
<td>trail mix as the healthy snack of the week</td>
<td>serving, 4.5 C dried cranberries total</td>
<td></td>
</tr>
<tr>
<td>Demonstrates how to make the popcorn &amp; fruit trail mix, describe each ingredient &amp; its nutritious benefits</td>
<td>• ¼ cup mini pretzels per serving, 9C mini pretzels total</td>
<td></td>
</tr>
<tr>
<td>Have the kids and parents make their own healthy snack together</td>
<td>• ½ C popcorn per serving, 17.5 C popcorn total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• ½ cup whole grain cheerios per serving, 17.5C whole grain cheerios total</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1/8 cup dark chocolate chips per serving, 4.5 C dark chocolate chips</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 1 large mixing bowl</td>
<td></td>
</tr>
<tr>
<td></td>
<td>• 35 Halloween cups</td>
<td></td>
</tr>
</tbody>
</table>

Serves: 35
Serving size: 1 Halloween cup (about 12 oz)

<p>| 12:20-12:30 PM | Have parents and kids create MyPlate: CHO, PRO, and fat specific goals that they can work on for the week |
| Have the kids and parents activity log sheets to track their physical activity for the week | • Pens/pencils |
| • Goal Sheet |
| • Activity logs |</p>
<table>
<thead>
<tr>
<th>Week 3: Time Schedule</th>
<th>Topic</th>
<th>Materials Needed</th>
</tr>
</thead>
</table>
| 9:30-9:45 AM          | Review goals, activity logs, and take home activities from week 2 | • 1 classroom  
 15min-Review goals as a group  
 Discuss the challenges/successes associated with each family’s goals  
 Encourage and suggest ways the family can continue to work to meet those goals |
| 9:45-9:50 AM          | Have the kids and parents switch rooms. | • 2 classrooms |
| 9:50-10:35 AM         | Parent’s Nutrition Education:  
 1) Learning about sugary beverage choices: rethink your drink  
 2) Discuss how sugar affects the body and teeth  
 3) Dairy: 3 servings /day  
 a) Review foods and serving sizes from dairy group  
 4) Activity | • Power point presentation & projector  
 • White board & marker  
 Sugar shocker mix & match |
| 10:35-11:00 AM        | Activity | • Handout: Sugar |
Game

Alternative beverage choices

Kid’s Behavioral Health Education:

When do you eat Sugar?
How does sugar and other sweets make you feel?
Intuitively eating Sugar and other sweets.
Halloween - what can we do?

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Room</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:35-10:40 AM</td>
<td>Have the kids and parents return to one classroom for physical activity</td>
<td>1 classroom</td>
</tr>
<tr>
<td></td>
<td>5 min-switch rooms</td>
<td></td>
</tr>
<tr>
<td>10:40-11:10 AM</td>
<td>Circuit/Relay Training Part 2</td>
<td>1 classroom</td>
</tr>
<tr>
<td></td>
<td>30 min-physical activity</td>
<td>1 classroom</td>
</tr>
<tr>
<td></td>
<td>Boom box &amp; kids appropriate music</td>
<td></td>
</tr>
<tr>
<td></td>
<td>60 water bottles filled with water</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Resistance bands</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Posters for different stations</td>
<td></td>
</tr>
<tr>
<td>11:10-11:15 AM</td>
<td>Have the kids and parents switch rooms</td>
<td>1 classroom</td>
</tr>
<tr>
<td></td>
<td>5 min-switch rooms</td>
<td></td>
</tr>
<tr>
<td>11:15 AM-12:00 PM</td>
<td>Kid’s Nutrition Education:</td>
<td></td>
</tr>
<tr>
<td>------------------</td>
<td>---------------------------</td>
<td></td>
</tr>
<tr>
<td>45min- curriculum</td>
<td>1) What happens when we have too much sugar? *Make a list/discuss with the class</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2) What beverage do you think has the most sugar? *Sugar shocker measuring activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>3) What are some healthy beverage choices?</td>
<td></td>
</tr>
<tr>
<td>Parent’s Behavioral Health Education:</td>
<td>Sugar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>When do you eat Sugar? Is it seen as a “treat”? When do you give “treats”? Discuss the connection between Sugar and emotions.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>What are other rewards?</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Intuitively eating Sugar and other sweets</td>
<td></td>
</tr>
<tr>
<td></td>
<td>White board</td>
<td></td>
</tr>
<tr>
<td></td>
<td>White board markers</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Power point presentation &amp; projector</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Handout: Sugar Shockers, measuring activity</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Sugar</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Tsp measurement</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Green plastic cups</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Empty bottles of beverages being used</td>
<td></td>
</tr>
<tr>
<td>12:00-12:20 PM</td>
<td>Fruit &amp; Yogurt Parfaits:</td>
<td></td>
</tr>
<tr>
<td>20min-snack</td>
<td>Introduce fruit and yogurt parfaits as the healthy snack of the week</td>
<td></td>
</tr>
<tr>
<td>Ingredients</td>
<td>18C low fat vanilla &amp; strawberry yogurt</td>
<td></td>
</tr>
<tr>
<td></td>
<td>10C assorted berries</td>
<td></td>
</tr>
<tr>
<td></td>
<td>frozen (defrost in</td>
<td></td>
</tr>
</tbody>
</table>
Demonstrate how to make the parfait, describe each ingredient & its nutritious benefits
Have the kids and parents make their own fruit and yogurt parfaits together

| 12:20-12:30 PM | Have parents and kids create sugary beverage and dairy specific goals that they can work on for the week
Give the kids and parents activity log sheets to track their physical activity for the week |
<table>
<thead>
<tr>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>10min-closing and goal setting</td>
<td></td>
</tr>
</tbody>
</table>

Week 4: Fast Food

<table>
<thead>
<tr>
<th>Week 4: Time Schedule</th>
<th>Topic</th>
<th>Materials Needed</th>
</tr>
</thead>
</table>
| 9:30-9:45 AM          | Weigh participants as they arrive
Distribute food frequency questionnaires
Collect program evaluations
Review goals, activity logs, and take home activities from week 3
Discuss the challenges/successes associated with each family’s goals
Encourage and suggest ways the family can | 1 classroom
Goal sheets
Activity Logs
Food frequency questionnaire
Program evaluation
Pens/Pencils
Goal stickers
Scale |
| 15min-Review goals as a group | |
continue to work to meet those goals

<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
</tr>
</thead>
</table>
| 9:45-10:45 AM| Nutrition Education:  
1) What fast food restaurants do you like to go to with your family?  
*Make a list/discuss with the class  
2) Fats  
Review portion sizes  
Highlight food sources  
3) MyPlate Activity:  
Pizza  
Happy meal  
Buffet  
Family picnic  
Behavioral Education:  
Parents-  
Review and discuss Intuitive eating  
Fast food  
How stress, expectations of parents, and fast food tie in together  
How was fast food given when you were a kid-has it changed? |
| 1 hr-curriculum | • Power point presentation & projector  
• MyPlate: food models and plates  
• Whiteboard  
• Markers |
<table>
<thead>
<tr>
<th>Time</th>
<th>Activity</th>
<th>Equipment/Supplies</th>
</tr>
</thead>
<tbody>
<tr>
<td>10:45-10:50 AM</td>
<td>Break</td>
<td>1 classroom</td>
</tr>
<tr>
<td></td>
<td></td>
<td>Have the kids and parents take a quick break &amp; then return for physical activity</td>
</tr>
<tr>
<td>10:50-11:30 AM</td>
<td>Yoga</td>
<td>1 classroom&lt;br&gt;Yoga mats/towels if available&lt;br&gt;Family yoga DVD&lt;br&gt;TV/projector &amp; DVD player</td>
</tr>
<tr>
<td></td>
<td></td>
<td>30min-physical activity</td>
</tr>
<tr>
<td>11:30-12:30 PM</td>
<td>Turkey Hummus Wrap:</td>
<td>Ingredients&lt;br&gt;30 6in. whole wheat tortillas&lt;br&gt;15 C shredded carrots&lt;br&gt;30 slices of lean, low sodium turkey&lt;br&gt;30 Tbsp. hummus&lt;br&gt;10C cherry tomatoes&lt;br&gt;15C sliced cucumbers&lt;br&gt;Napkins</td>
</tr>
<tr>
<td></td>
<td>Introduce turkey hummus wrap as the healthy snack of the week</td>
<td>Serves: 30&lt;br&gt;Serving Size: 1 6 in turkey hummus wrap</td>
</tr>
<tr>
<td></td>
<td>Demonstrate how to make the turkey hummus wrap, describe each ingredient &amp; its nutritious benefits</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Have the kids and parents make their own turkey hummus wrap together</td>
<td></td>
</tr>
</tbody>
</table>
| **Hand out Program certificates & giveaways** | **Collect all final evaluations & food frequency questionnaires** | • Program certificates  
• Giveaways/Prizes |

**APPENDIX F**

**Parent’s Handouts**

**Week 1:**

- CDC BMI growth charts for boys & girls ages 2 to 20 years
- How to Buy Affordable Fruits and Vegetables
- Goal Sheet
- Activity Log
- Anthropometric Log
- Food Frequency Questionnaire
- Physical Activity Waiver
- Photo Consent Form

**Week 2:**

- Tips to Help You Eat Whole Grains
- Goal Sheet
- Activity Log
- Homework Handout: Rethink Your Drink

**Week 3:**

- Goal Sheet
- Activity Log
- Homework Handout: Fast Food and Family Picnic

**Week 4:**

- Food Frequency Questionnaire
- Anthropometric Log
- Healthy Snack Recipe Booklet
• Program Evaluation

Kid’s Handouts

Week 1:
• MyPlate Coloring Sheet
• Fruit and Vegetable Activity Sheet
• Goal Sheet
• Activity Log
• Folder Sheet Covers

Week 2:
• Goal Sheet
• Activity Log
• Homework Handout: Rethink Your Drink

Week 3:
• Rethink Your Drink Worksheet
• Goal Sheet
• Activity Log
• Homework Handout: Fast Food and Family Picnic

Week 4:
• No handouts
5-4-3-2-1-0 Steps to Healthy Families

Anthropometric Log

Week 1
Date: ________________
Height: ________________
Weight: ________________
BMI: ________________

Week 4
Date: ________________
Height: ________________
Weight: ________________
BMI: ________________
# Food Frequency Questionnaire

## 5-4-3-2-1-0 Steps to Healthy Families

### Food Frequency Questionnaire

Complete this form for your child:

<table>
<thead>
<tr>
<th>My Child</th>
<th>Never</th>
<th>1-2 x/day</th>
<th>1-2x/week</th>
<th>3 or more x/week</th>
</tr>
</thead>
<tbody>
<tr>
<td>Eats fruit…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats vegetables…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats beef…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats chicken or turkey…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats beans or lentils…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats fish…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats nuts…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats regular cheese…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats reduced fat cheese…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks whole milk…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks low fat milk (1%, 2%)…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks fat free milk…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats regular yogurt…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats low fat yogurt…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats fat free yogurt…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats ice cream, frozen yogurt, or pudding…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats cookies, candy, cake, or pastries…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks regular soda…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks diet soda…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks juice…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Drinks Gatorade…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eat white pasta…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats white rice…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats whole wheat pasta…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats brown rice…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats white bread…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats wheat bread…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats corn tortillas…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats flour tortillas…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Eats whole wheat tortillas…</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Uses salad dressing, mayonnaise, or cream</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>sauc...</td>
<td>Reads the nutrition facts labels on food...</td>
<td>Eats at a sit down restaurant...</td>
<td>Eats fast food...</td>
<td></td>
</tr>
<tr>
<td>---------</td>
<td>------------------------------------------</td>
<td>-------------------------------</td>
<td>-----------------</td>
<td></td>
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</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Never</td>
<td>1-2 x/day</td>
<td>1-2x/week</td>
<td>3 or more x/week</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>We sit down and eat as a family...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I cook with butter, margarine, lard when preparing meals for my child...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>I cook with vegetable oils when preparing meals for my child...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>How much time does your child spend per day doing:</td>
<td>0</td>
<td>15-30 minutes</td>
<td>45 minutes</td>
<td>60 minutes or more</td>
</tr>
<tr>
<td>Exercise/physical activity...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Indoor exercise/sports...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Outdoor exercise/sports...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Watching TV...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Playing video games...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Using the computer...</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>
5-4-3-2-1-0 Steps to Healthy Families

Program Evaluation

1. What was your favorite part about the program?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

2. What did you like the least about the program?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

3. What is one thing you remember learning from the program?

______________________________________________________________________________
______________________________________________________________________________
______________________________________________________________________________

4. Do you feel that your family is healthier now?
We value your opinion. Please take a few moments to tell us what you thought of our program. Your comments and suggestions will help us make improvements.

NAME (Optional): ___________________     DATE: __________________________

PROGRAM NAME: **5-4 - 3-2-1-0 Steps to Healthy Families**

How did you hear about this program? (Please check all that apply)

- Mailing to my home
- Call to my home
- Physician/Nurse
- Facey Website
- Flyer/poster at medical group
- Newsletter

On a scale from 1 to 4, where 1= “Not at all sure” and 4= “Very sure”, please circle the number that indicates how sure you are that you can do the things you learned on your own.

How sure are you that your family can:

<table>
<thead>
<tr>
<th></th>
<th>Very Sure</th>
<th>Sure</th>
<th>Sort of Sure</th>
<th>Not Sure at all</th>
</tr>
</thead>
</table>

□ Please check the box if it is not okay to share your comments/story.

Thank You!
1. Set goals to make changes to improve your health 4 3 2

2. Create a well-balanced meal by using the Plate Method 4 3 2

3. Eat food intuitively 4 3 2

   A. Identify what it means to be healthy & ways to maintain a healthy lifestyle 4 3 2

5. Show how to use healthy food choices in fast food restaurants 4 3 2

6. Analyze the content of sugar in different beverages 4 3 2

7. Name various physical activities that can be practiced indoors and outdoors 4 3 2

8. Recognize a standard portion size 4 3 2

9. Show a continued interest in health and nutrition 4 3 2
On a scale from 1 to 4, where 1= “Strongly Disagree” and 4= “Strongly Agree”, please circle the number that indicates how sure you are that you can do the things you learned on your own.

S.A. = Strongly Agree
A. = Agree
D. = Disagree
S.D. = Strongly Disagree

<table>
<thead>
<tr>
<th></th>
<th>S.A.</th>
<th>A.</th>
<th>D.</th>
</tr>
</thead>
<tbody>
<tr>
<td>5. Were the educators informative and caring?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>6. Was the program a good length of time to cover the subject?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>7. Have the skills &amp; information you learned in the program helped you to develop a healthier lifestyle?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
<tr>
<td>8. Overall, how much did you learn about good nutrition and intuitive eating?</td>
<td>4</td>
<td>3</td>
<td>2</td>
</tr>
</tbody>
</table>

Do you have any comments or suggestions about the program or a story that you would like to share?

____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________
____________________________________________________________________________

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APPENDIX J

Program Handouts

Parent’s Handouts

Week 1:

How to Buy Affordable Fruits & Vegetables
1. Use Store Coupons
   a. Buy produce that is on sale. Apply for free club cards at all your local grocery stores to receive weekly discounts on fruits and vegetables (I.e. Ralph’s, Vons, Albertsons, etc.).

2. Shop at Multiple Grocery Stores
   a. Check to see what items are on sale at the local grocery stores to save money before you shop.

3. Supplement with Frozen and Canned F & V
   a. Frozen F & V:
      i. Last longer than fresh produce & offer the same amount of nutrients
   b. Canned F & V:
      i. Canned fruits: Only buy the canned fruits that are in water. Avoid canned fruits that are in syrup or have added sugar.

*Avoid canned vegetables unless labeled as low sodium

4. Visit Your Local Farmer’s Market
   a. Visit www.localharvest.org to search for a farmer’s market in your area.
b. Visit CSA-Community Supported Agriculture at: www.localharvest.org/csa to buy produce directly from a farmer in your area.

5. Grow Your Own Fruits and Vegetables

a. Growing your own produce is a great way to get your kids excited about eating fruits and vegetables. Try planting berries, vegetables, herbs, and fruit trees.

b. Strawberries, tomatoes, herbs, and garlic take up less space if you live in an apartment or smaller area.
Week 2:

Tips to help you eat whole grains

At Meals:

- To eat more whole grains, substitute a whole-grain product for a refined product – such as eating whole-wheat bread instead of white bread or brown rice instead of white rice. It’s important to substitute the whole-grain product for the refined one, rather than adding the whole-grain product.
- For a change, try brown rice or whole-wheat pasta. Try brown rice stuffing in baked green peppers or tomatoes and whole-wheat macaroni in macaroni and cheese.
- Use whole grains in mixed dishes, such as barley in vegetable soup or stews and bulgur wheat in casserole or stir-fries.
- Create a whole grain pilaf with a mixture of barley, wild rice, brown rice, broth and spices. For a special touch, stir in toasted nuts or chopped dried fruit.
- Experiment by substituting whole wheat or oat flour for up to half of the flour in pancake, waffle, muffin or other flour-based recipes. They may need a bit more leavening.
- Use whole-grain bread or cracker crumbs in meatloaf.
- Try rolled oats or a crushed, unsweetened whole grain cereal as breading for baked chicken, fish, veal cutlets, or eggplant parmesan.
- Try an unsweetened, whole grain ready-to-eat cereal as croutons in salad or in place of crackers with soup.
- Freeze leftover cooked brown rice, bulgur, or barley. Heat and serve it later as a quick side dish.

As Snacks:

- Snack on ready-to-eat, whole grain cereals such as toasted oat cereal.
- Add whole-grain flour or oatmeal when making cookies or other baked treats.
- Try 100% whole-grain snack crackers.
- Popcorn, a whole grain, can be a healthy snack if made with little or no added salt and butter.

What to Look for on the Food Label:
• Choose foods that name one of the following whole-grain ingredients first on the label’s ingredient list:

"brown rice"  
"buckwheat"  
"bulgur"  
"millet"  
"oatmeal"  
"quinoa"  
"rolled oats"  
"whole-grain barley"  
"whole-grain corn"  
"whole-grain sorghum"  
"whole-grain triticale"  
"whole oats"  
"whole rye"  
"whole wheat"  
"wild rice"

• Foods labeled with the words "multi-grain," "stone-ground," "100% wheat," "cracked wheat," "seven-grain," or "bran" are usually not whole-grain products.

• Color is not an indication of a whole grain. Bread can be brown because of molasses or other added ingredients. Read the ingredient list to see if it is a whole grain.

• Use the Nutrition Facts label and choose whole grain products with a higher % Daily Value (%DV) for fiber. Many, but not all, whole grain products are good or excellent sources of fiber.

• Read the food label’s ingredient list. Look for terms that indicate added sugars (such as sucrose, high-fructose corn syrup, honey, malt syrup, maple syrup, molasses, or raw sugar) that add extra calories. Choose foods with fewer added sugars.

• Most sodium in the food supply comes from packaged foods. Similar packaged foods can vary widely in sodium content, including breads. Use the Nutrition Facts label to choose foods with a lower % DV for sodium. Foods with less than 140 mg sodium per serving can be labeled as low sodium foods. Claims such as “low in sodium” or “very low in sodium” on the front of the food label can help you identify foods that contain less salt (or sodium).

**Whole Grain Tips for Children**

• Set a good example for children by eating whole grains with meals or as snacks.

• Let children select and help prepare a whole grain side dish.

• Teach older children to read the ingredient list on cereals or snack food packages and choose those with whole grains at the top of the list.

Retrieved from: USDA MyPlate

**Week 3: No Handouts**
5-4-3-2-1-0 Steps to Healthy Living: Recipe Booklet

Week 1: Fruit, Vegetable, and Cheese Kabobs

Ingredients

- 54 mini Kabob sticks
- 1 box of wax paper
- 2 lb. of strawberries
- 2 green bell peppers
- 2 red bell peppers
- 5 bananas
- 27 low fat string cheese sticks
- 2 cantaloupe melons
- 4 apples
- 1 cucumber

Serves: 27
Serving size: 1 fruit & 1 vegetable kabob stick
Approximate cost per person: $.94

Week 2: Popcorn & Fruit Trail Mix

Ingredients

- 4.5 cups of dried cranberries

(1/8 cup dried cranberries per serving)
• 9 cups of mini pretzels
(¼ cup mini pretzels per serving)
• 17.5 cups of popcorn
(½ cup of popcorn per serving)
• 17.5 cups of whole grain cheerios
(½ cup whole grain cheerios per serving)
• 4.5 cups of dark chocolate chips
(1/8 cup dark chocolate chips per serving)

Serves: 23
Serving size: 1 Halloween cup (9fl. oz)
Approximate cost per person: $.83

Week 3: Fruit & Yogurt Parfaits

Ingredients

• 18C non fat plain yogurt
• 10C assorted berries frozen (defrost in fridge before serving)
  • 1 bag dried cranberries
  • 1 box Trader Joe’s High Fiber O’s cereal
    • 32 cups
    • 32 spoons

Serves: 32
Serving Size: 1 8oz cup
Approximate cost per person: $.78
Week 4: Turkey Hummus Wrap

Ingredients

- 30 6in. whole wheat tortillas
- 7.5 C shredded carrots
- 30 slices of lean, low sodium turkey
- 30 Tbsp. hummus
- 7.5 C cherry tomatoes
- 7.5 C sliced cucumbers
- Napkins

Serves: 30

Serving Size: 1

6 in turkey hummus wrap
Kid’s Handouts

Week 1:

Fruit or Vegetable

What makes a Fruit?

- Contains seeds
- Sweet
- Fleshy part of a tree or plant

What Makes A Vegetable?

- Edible part of a plant (other than the fruit or seed)
- Usually the leaf, stem, or root of a plant
Circle one

1. Peaches: Fruit Vegetable

2. Celery: Fruit Vegetable

3. Tomato: Fruit Vegetable

4. Cabbage: Fruit Vegetable

5. Apple: Fruit Vegetable
6. Bell Pepper:  
   Fruit  
   Vegetable

7. Pear:  
   Fruit  
   Vegetable

8. Eggplant:  
   Fruit  
   Vegetable

Week 2: MyPlate Coloring Sheet

Week 3:
What beverage has the most sugar?

- Snapple lemonade iced tea
  
  16 fluid ounces= _____________ tsp sugar

- Welch’s grape juice
  
  11.5 ounce can= _____________ tsp sugar

- Gatorade
  
  11.5 ounce can= _____________ tsp sugar

- Sunny Delight
16 fluid ounces = ________________ tsp sugar

- **Non-fat chocolate milk**

  8 fluid ounces/1 cup = ________________ tsp sugar

- **Coke**

  8 fluid ounces/1 cup = ________________ tsp sugar