CHILDHOOD OBESITY: ASSESSING PARENTAL KNOWLEDGE ON OBESITY DETERMINANTS IN HISPANIC CHILDREN IMPLEMENTING A CULTURALLY MODIFIED SCREENING TOOL
A DOCTORAL PROJECT

Submitted in Partial Fulfillment of the Requirements

For the degree of

DOCTOR OF NURSING PRACTICE

By

Alexandra Interiano, MSN, FNP-C, RN

Doctoral Project Committee Approval:

Darlene Finocchiaro, PhD, RN, Project Chair
Kathy Hinoki, PhD, RN, Committee Member

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ABSTRACT

Introduction: Current trends indicate there has been a decrease in obesity prevalence. However, obesity in Hispanic children continues to rise and is influenced by socioeconomic status and lifestyle behaviors that are inevitably intertwined with cultural dynamics such as psychosocial factors, genetic, and metabolic etiologies.

Purpose: The purpose of this Doctor of Nursing Practice (DNP) project was to adapt a well-established general nutritional screening tool addendum and modify it to address the specific needs for the Hispanic family unit that were identified in the literature as being significant.

Methods: Addressing perceptions, attitudes and knowledge deficits within the Hispanic family unit, a culturally modified tool was implemented in a clinical practice setting to 13 children and their parents. This tool assessed obesity determinants through tailored questions, to provide individual educational interventions based on identified knowledge deficits. Baseline anthropometric measurements were recorded for post-project statistical analysis, in addition to a telephonic progress check-in to determine success, barriers, and education reinforcement. After 6 months, the body mass index (BMI) in these children and adolescents will be obtained to determine if there was a 3-5% decrease from their baseline measurement.

Results: 93% of respondents did not know what the term BMI meant. In addition, 77% of participant parents believed that their children were overweight, but a common
theme was an underlying belief that children who are larger in size are viewed as being in good health. Overall the participating children were consuming above-average levels of fast food (3.23 servings/week), sugary beverages (4.38 servings/day), and spent at least 3 hours on screen time, all of which were higher than the recommendations set by the respective expert guidelines.

Discussion: It is evident from this small study that the Hispanic family unit may lack basic obesity conceptualization knowledge. Therefore, there is a critical need to assess parental attitudes, perceptions, and knowledge deficits, address cultural nuances, and develop culturally competent interventions in order to initiate meaningful obesity change and reduce the prevalence rate.
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ACKNOWLEDGMENTS

Do not be conformed to this world, but be transformed by the renewal of your mind, that by testing you may discern what is the will of God, what is good and acceptable and perfect –Romans 12:2 ESV.

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BACKGROUND

Childhood obesity is a major epidemic in society today that significantly impacts Hispanic children and adolescents more than any other ethnic group of children (Ochoa & Berge, 2016). The prevalence of obesity among Hispanic children has risen in the last thirty years, with rates of obesity as high as 21.9%, in comparison to the obesity rates of non-Hispanic blacks (19.5%) and non-Hispanic whites (14.7%) (Ochoa & Berge, 2016; Ogden, Carroll, Fryer, & Flegal, 2015). In greater contrast, the prevalence of obesity among non-Hispanic Asian youth was shown to be even lower (8.6%), compared to Hispanic, non-Hispanic white or non-Hispanic black children (CDC, 2015b; Ogden et al., 2015).

The incidence of obesity has been a significant problem throughout the centuries, and the chronicity related with food shortages and malnutrition is arguably linked with obesity throughout history. The scarcity of food inevitably facilitated the notion that for those that had access, bodily girth was associated with affluence, prosperity, and power, which resulted in the acceptance of corpulence as a being a virtuous thing. Moreover, being portly and having increased flesh was an indication of good health, was well-regarded and desired (Eknoyan, 2006; Komaroff, 2016). This belief was further promulgated in the art and literature of the renaissance movement of the seventeenth and eighteenth centuries (Eknoyan, 2006). However, during the nineteenth century the “impact of obesity on quality of life” came into societal consciousness as a result of the ill health linked with the chronicity of obesity (Eknoyan, 2006, p. 421).

According to von Hippel and Nahhas (2013), it wasn’t until 1963 that childhood obesity and the distribution of children’s body mass index (BMI) began being recorded
through national surveys. These surveys demonstrated that obesity prevalence in the 1970s was low at approximately 5%, supporting the notion that an increase in availability in quantity and quality of food coupled with the technological advances of the day set the tone for obesity’s exponential rise in the 1990s to a staggering 30%. Consequently, Eknoyan (2006) suggested that the abundance of easily accessible food, associated with a leisurely lifestyle, and an “imbalance between energy intake, output, and reduced physical activity” accounted for the prevailing obesity epidemic (p. 422).

The Mayo Clinic (2015) defines childhood obesity as “a serious medical condition that affects children and adolescents. It occurs when a child is well above the normal weight for his or her age and height” (p. 1). Within these age groups, clinically overweight children are recognized at a body mass index (BMI) at or above the 85th percentile and clinical obesity is recognized at or above the 95th percentile (CDC, 2015a).

Presently, the Center for Disease Control and Prevention (CDC), reports that the prevalence of childhood obesity in the United States among school age kids continues to be a significant problem (CDC, 2015a). The overall prevalence of obesity affecting children in the United States (US) was 17% between 2011 and 2014 (Ogden et al., 2015). While current trends suggest that there has been a decline in prevalence, childhood obesity continues to remain high, affecting 12.7 million children, between the ages of 2-19 (CDC, 2015a).

The immediate and long term health effects of childhood obesity have significant sequela on the physical aspect, as well as on the psychosocial sphere of children and adolescents. Obese children are at an increased risk of becoming obese adults with
obesity associated health problems (CDC, 2015c; World Health Organization, 2015). The development of comorbidities, usually present in adults, are manifesting in children and adolescents at an earlier age and include conditions such as cardiovascular diseases, hyperinsulinemia, hypercholesterolemia, hypertension, musculoskeletal issues, breathing disorders such as sleep apnea, as well as other related comorbidities (Champion & Collins, 2013; Etelson, Brand, Patrick, & Shirali, 2003). In addition, the National Institute of Health Care Management (2007) reported that overweight children are at increased risk for psychosocial issues such as stigmatization, lower self-esteem, depression, self-blame, and social rejection by both peers and adults as a result of their obesity.

Because obesity is a complex and multidimensional epidemic, what has been gleaned through a myriad of research is that obesity prevalence among Hispanic children and adolescents is affected by socioeconomic status, educational level, race/ethnicity, gender, and bio-behaviors that are inevitably intertwined with cultural dynamics including level of acculturation, food preferences, perceptions and attitudes, psychosocial factors, as well as genetic and metabolic etiologies (Champion & Collins, 2013; Crespo et al., 2012). Moreover, previous studies have shown that the prevalence of obesity among children and adolescents whose adult primary caretaker (parent, guardian, etc.) had completed college, was approximately half that of those whose primary caretaker did not complete high school (CDC, 2015c). In addition to the physical impact of obesity among children and adolescents, the fiscal impact has been significant with health care expenses amounting to approximately 10% of all medical costs in 2008, which translates to a staggering 147 billion dollars, compared to the previous 10-year-period of 78 billion
dollars (Hammond & Levine, 2010; Reilly, Ness, & Sheriff, 2007).

Due to the physical and fiscal impact of childhood obesity, numerous initiatives have been developed to address this epidemic. In 2001, the Food and Drug Administration and National Institutes of Health developed the Healthy People 2010 initiative that sought to prevent and treat obesity as a means to reduce chronic diseases associated with an unhealthy diet and weight (Komaroff, 2016). However, in 2010, at the end of the 10-year goal, the experts concluded that measures set in place to treat and prevent obesity had not been met.

In 2008, First Lady, Michelle Obama helped forge a comprehensive initiative called Let’s Move! a strategy developed as a commitment to resolve obesity “within a generation,” as a means for children to live healthier lives (Let’s Move!, 2010, p. 1). To this effect, President Barack Obama signed a Presidential Memorandum giving rise to the Task Force on Childhood Obesity convened to conduct an evaluation of nutrition and physical activity programs and policies, to set benchmarks and then develop a nationwide plan of action to maximize federal resources toward the First Lady’s endeavor to combat childhood obesity (Let’s Move!, 2010, p. 1). A year later, in 2011, the Let’s Move! One Year Progress Report was published, identifying several noteworthy pledges including the food and beverage industry’s “call to provide parents with better nutritional information and healthier food products” by placing calorie information on packaging and a push for “nutritional standards for school food and menu labeling in restaurants” in an effort to reduce obesity in children (p. 5).

**Purpose of Project**

It is evident from examining the literature and data that childhood obesity is an
epidemic that affects all races, ages, ethnicities and genders. However, Hispanic children and adolescents are more affected than non-Hispanic Black, White, or Asian children. The research also indicates that due to parental knowledge deficits, attitudes and perceptions of health coupled with the cultural dynamics specific to the Hispanic family unit, these children and adolescents are at greater risk for developing co-morbidities related to cardiovascular diseases, psychosocial problems, and mobility issues. Therefore, there is an underlying need to identify determinants contributing to obesity within the Hispanic family unit by examining associations of bio behaviors, parental attitudes and perceptions of health versus obesity, examine food preferences and eating patterns, and determine level of physical activity to initiate meaningful change. Interventions include providing relevant education on identified knowledge deficits and standard screening tools. Moreover, there is a fundamental need to understand cultural dynamics, and geared with this knowledge, providers can hone in on the nuances particular to this target population to develop culturally competent interventions that resonate with the Hispanic family’s unique needs which may increase awareness to initiate change and reduce obesity (Etelson et al., 2003).

Therefore, the purpose of this Doctor of Nursing Practice (DNP) project was to adapt a well-established general nutritional screening tool addendum and modify it to address the specific needs for the Hispanic family unit that were identified in the literature as significant. The goal of this screening tool addendum was to assess Hispanic parents and their children’s bio behaviors through a variety of tailored questions, to provide a pathway for individualized educational interventions and resources, and deliver coaching based on identified knowledge deficits. Baseline anthropometric measurements
were recorded for pre- and post-project statistical analysis. In addition, follow-up was conducted to determine success and barriers encountered in initiating and implementing healthier choices, increased physical activity, and reinforcement of educational interventions. At the 6-month mark, the Nurse Practitioner will reassess and determine if the BMI decreased in these children and adolescents. The objectives of this DNP project included: 1) develop an addendum to the current screening tool being used in the outpatient clinical setting, 2) provide tailored patient education on identified knowledge deficits through teaching and the provision of educational resources, and 3) evaluate parental and child learning via return verbalization of three things that were learned from the educational session, and 4) determine if the children’s BMI decreased after a 6-month reevaluation period.

**Supporting Framework**

The use of a theoretical framework provides the “overall conceptual underpinnings of a study” and provides the focus needed to develop the concept and drive the research process (Polit & Beck, 2014, p. 128). The Social Cognitive Theory (SCT) developed by Albert Bandura (1977) posits that people learn by observing other’s behaviors and attitudes, but these learned behaviors have consequences. Bandura (1977) believed in *reciprocal determinism*, which in essence suggests that one’s environment causes one’s behavior. The SCT is an appropriate framework in which to guide this DNP project because of the Hispanic normative and collectivist cultural values affecting the Hispanic family unit. Furthermore, Bandura’s (1977) theory emphasizes that human behavior depends on the reciprocal interaction of behavior, environmental, and personal factors as illustrated in the triadic model shown in Figure 1 (Bandura, 1977; Zoorob et al.,
It is vital to consider that Hispanic beliefs are entrenched in *familismo*, a Hispanic cultural value that proposes the significance of strong family ties to the “nuclear family, extended family, and kinship networks,” placing a strong emphasis on decision making in the family as a whole versus only the individual (Ayon, Marsiglia & Bermudez-Parsai, 2010, p. 3). Thus, the Social Cognitive Theory (SCT) can be used as a framework to modify health behaviors in overweight and obese children by changing personal mechanisms through examining the family environment, observing the behavior patterns of the generational hierarchy particular to Hispanics, and targeting the family unit when developing appropriate, culturally sensitive, family-based interventions.

The theory’s core assumptions and statements describe how people assimilate and maintain certain behavioral patterns (Bandura, 1997). Sosa (2012) theorizes that “SCT incorporates both socio-structural and personal determinants of health…and includes evaluations of physical, social, and self-evaluative outcome expectations resulting from behavior” (p. 396). Consequently, initiating and evaluating behavioral change in obese children will depend on the understanding of how behavior, environment, and personal factors interrelate to each other in an effort to decrease obesity prevalence in Hispanic families as a whole.

Moreover, Bandura (1997) hypothesized that self-efficacy is derived from an individual’s confidence in their ability to engage in new behaviors to attain a desired outcome, but these behaviors must first be learned and role modeled. However, this premise appears reliant on a parent’s ability to overcome personal and sociocultural barriers by engaging in healthy behaviors such as purchasing and opting for healthier
food choices, encouraging physical activity, and limiting unhealthy snacks. These are all constructs that are meant to prevent the child from developing obesity, but must similarly be assessed in conjunction with the child’s environment, and the family as a unit.

In a systematic review conducted by Pinard et al. (2011), the family environment has been recognized as one that can either facilitate or inhibit healthy behaviors, and parents are responsible for setting the tone in the home environment within the family dynamic. Moreover, from a social environment perspective, Pinard et al. (2011) posit that parents serve as role models and unduly influence their child’s health behaviors through parenting strategies and feeding styles, which are strong predictors of the learned behaviors leading to obesity. By utilizing Bandura’s Social Cognitive Theory (SCT), parents and key family members can be empowered in understanding how their behavior, environment, and personal factors enhance knowledge and help to develop the skill set necessary to help their children engage in self-efficacy. Finally, the use of the SCT has been applied in a variety of disciplines and provides a solid framework to initiate meaningful change within the Hispanic family unit in those children and adolescents deemed clinically overweight and obese (Bandura, 1997; Sosa, 2012; Zoorob et al., 2013).

Figure 1. Bandura’s Social Cognitive Theory Triadic Model (Bandura, 1977).
REVIEW OF LITERATURE

Overview

A review of literature was conducted utilizing the electronic databases of Academic Search Premier, PubMed, ERIC, CINAHL/EBSCO, and Google Scholar. The search terms used in conjunction with childhood obesity included historical roots, prevalence, statistics, children, adolescents, youth, Hispanics, Mexican-American, Latino, and minorities. Additional terms queried were demographic and socioeconomic factors, including acculturation level, barriers and access to resources, school and community based interventions, family based interventions, educational interventions, health promotion, provider role, screening tools in childhood obesity, and BMI. The search terms were then refined to specifically examine childhood obesity in Hispanic children and adolescents, screening tool availability, screening tool development, Social Cognitive Theory related to childhood obesity, and Hispanic attitudes, beliefs, and perceptions of health versus obesity. Limitations were set for English and Spanish language scholarly journals from the year 2002 to the present year. The areas that this review of literature focused on were factors contributing to childhood obesity, contributing obesity factors unique to Hispanic children, interventions of childhood obesity, and childhood obesity screening tools and measures to determine what is lacking.

Factors Contributing to Childhood Obesity

In searching the databases for childhood obesity, the return for literature yielded several thousand articles. The more than 300 articles that best described the current problem within the parameters noted above were reviewed. A review of the literature affirmed that childhood obesity is a worldwide epidemic, and the implications are multi-
factorial. Multiple studies highlighted the critical nexus between pediatric and adulthood obesity and whose clinical pathway has been associated with chronic illnesses previously seen mostly in adults. Morello et al. (2012) found that a higher parent BMI was significantly correlated with a higher child BMI, which was consistent with previous studies that found that parent BMI was a strong predictor of child weight status (p. 1027). Moreover, childhood obesity puts youth at risk for other cardiovascular issues, such as congestive heart failure, coronary artery disease, stroke, and has also been linked to the development of metabolic syndrome, Type 2 Diabetes, as well as non-alcoholic fatty liver disease (Champion & Collins, 2013; Seibert, Allen, & Carrel, 2015). Obesity in children can negatively affect other multi-organ systems such as the renal, respiratory, and the musculoskeletal (Champion & Collins, 2013; Seibert et al., 2015). Sesselberg, Klein, O’Conner, and Johnson (2010) concluded that in addition to the above noted factors, overweight and obese children are at significant risk for psychological issues such as depression, increased risk for anxiety disorders, lowered self-esteem, and poor body image, which can lead to becoming targets of bullying. Due to both physical and psychosocial implications, it is imperative that providers recognize and address obesity early on in these children and adolescents (Melnyk, 2009).

Champion and Collins (2013) suggested that the interaction between the individual, behavior, and environment has been cited as the catalyst for obesity prevalence, which further supports the use of the Social Cognitive Theory for this DNP project. A review of the literature indicated that lifestyle has contributed to higher obesity pervasiveness, including consumption habits, level of physical activity, increased screen time, and low socioeconomic status, including acculturation and education status
of parents (Boudreau-Arauz, Kurowsli, Gonzalez, Dimon, & Oreskovic, 2013; Rosas et al., 2011). In the Expert Committee Recommendations authored by Barlow (2007), several studies were identified that have demonstrated a “clear link associated with environment and genetic susceptibility, including the discovery of leptin, ghrelin, adiponectin and other hormones that influence appetite, satiety, and fat distribution, which provides insight into metabolic mechanisms for physiologic risk” (p. 166).

Despite the critical physiologic nexus associated with obesity in children, Barlow (2007) also recognized that behavior influenced the susceptibility for obesity in genetically at-risk children. Thus, it is evident from the Expert Committee Recommendations (2007) that the relationship between obesity, genetic determinants, and specific behaviors are interrelated and compel further investigation. To this effect, Barlow (2007) indicated that developing obesity interventions that target children and adolescents may not be a one-size-fits all and will not change obesity prevalence or health outcomes if behavior is not examined.

Multiple root causes have been identified as having adverse effects on children and adolescent obesity, including a child’s cultural influence, parental perception, attitudes, and beliefs, consuming foodstuffs such as fried, fatty foods, sugar-sweetened drinks and snacks, eating larger portion sizes at every meal, unhealthy snack choices, ready-to-eat meals, readily available fast food access, and decreased physical activity (Boudreau et al., 2013; Rosas et al., 2011). Melynk (2009) similarly suggested that sedentary behaviors such as prolonged screen time on computers, television, and videogames, contributed to decreased physical activity.

Ochoa and Berge (2016) report that extensive research has confirmed the link
between TV viewing and obesity in children who viewed more than two hours of screen time per day and also found a higher prevalence of TVs in Hispanic children’s bedrooms, which allowed for additional viewing time. Ochoa and Berge (2016) interestingly found that parents were not concerned with the amount of television their children watched, but were unaware of adverse consequences associated with these habits and their children’s health.

Another factor associated with sedentary behaviors was the growing trend in schools offering less physical education classes. This finding coupled with previous research findings that children were spending less time outdoors being physically active, inevitably increased the prevalence of obesity (Champion & Collins, 2013). This trend appears to be a direct consequence of the 2001 No Child Left Behind Act (NCLBA); an education reform bill passed by Congress, which prompted schools to strengthen academic standards to increase proficiency in math and reading. However, in order to meet these requirements, many schools across the country continue to eliminate physical education in an effort to hold schools more accountable for student outcomes (U.S. Department of Education, 2001). Bader (2015) further found that educators are utilizing the time normally allotted for physical education, and taking it away as a means to discipline children for bad, inappropriate behavior or not completing class work, consequently decreasing the child’s access to physical activity. Unfortunately, all of these actions contribute more to an already critical problem facing children with obesity. In a 2013 study conducted by the Harvard School of Public Health, it found that less than 50% of U.S. children were getting adequate amounts of physical exercise needed for their age group (Bader, 2015). Bader (2015) reported that the U.S. Department of Health and
Human Services recommended that elementary age school children get 2.5 hours of exercise per week and students in junior and senior high school get 3.75 hours a week. Finally, Bader (2015) noted that there is no a federal law requiring a provision for physical education, nor that it needs to be provided to children in the primary or secondary school setting in the U.S. Thus, it is clear from the literature that there are various undercurrents that influence the prevalence of obesity in children and adolescents.

**Contributing Obesity Factors Unique to Hispanic Children**

In searching the databases for childhood obesity among Hispanic children and adolescents, the return yielded several hundred articles. The selected articles for inclusion in this literature review were those that best described the prevalence of this problem within the target population.

Perez-Morales, Bacardi-Gascon, and Jimenez-Cruz (2012) suggested that in the last decade, there were only a few studies which addressed childhood obesity primarily in Hispanic families. This is alarming given that within the Mexican-American subgroup, the prevalence of childhood obesity was even greater than in other Hispanic subgroups. In particular, school age Mexican-American boys were deemed overweight as compared to school aged Mexican-American girls by a ratio of 40% to 34 % respectively (Sosa, 2012). This finding was further bolstered in the Expert Committee Recommendations authored by Barlow (2007), who suggested that the obesity epidemic disproportionately affects some racial/ethnic groups more than others, in particular Mexican-American boys.

The literature clearly supports the findings that obesity prevalence in adolescent Mexican-American males continues to grow and has nearly doubled in the last two
decades (Sosa, 2012). In a retrospective study conducted by Champion and Collins (2013), it was found that in Mexican-American adolescents, a discernable increase in obesity incidence was documented starting at age 13 years and continuing through the age of 18. Other literature further elucidated a critical correlation between overweight Hispanic parents, and an increased risk of obesity in their children as adults predisposing the children to chronic illness including heart disease and diabetes (Boudreau et al., 2013; Morello, Madanat, Crespo, Lemus, & Elder, 2012; Rosas et al., 2011).

While Hispanic children are more likely to be overweight and obese than other non-Hispanic children, a low socioeconomic status is associated with increased rates of obesity in certain subgroups. Socioeconomic disparities have been well documented in children of all ethnicities, but in Hispanic children and adolescents, specific, multifactorial issues and barriers have been identified as contributing to obesity prevalence. Some of these factors include parental perception of health status, education level, acculturation, normative cultural influences on food consumption and purchases, behavioral modeling, and level of physical activity (Etelson et al., 2003; Pulgaron, Patino-Fernandez, Sanchez, Carrillo, & Delamater, 2013; Seibert et al., 2015).

Ochoa and Berge’s (2016) study outlines the underlying causes and challenges faced by Hispanic parents in encouraging physical activity or modifying existing habits and behaviors, coupled with the consideration of barriers to initiating change, including the issue of access. Previous research has cited that a lack of access has contributed to the growing obesity problem in this population, most notably accessing affordable healthy food in their neighborhoods, increasingly dangerous environments that make being outdoors challenging, and other issues associated with access such as parental time
constraints and expense (Boudreau et al., 2013; Ochoa & Berge, 2016). Another critical barrier that Hispanic children and adolescents face is a lack of access to primary care where they may identify with the provider, receive culturally appropriate counseling on diet and exercise, referral to nutritional support, preventive screenings, follow-up, regular monitoring of BMI, and continuous evaluation of the obese child to determine the effectiveness of recommendations and interventions (Champion & Collins, 2013; Lake, 2008).

Boudreau et al. (2013) suggested it is critical to address overall family perceptions, barriers, and behaviors to incorporate a family centered approach to treating obesity. Despite these suggestions, obesity prevention additionally appears to be hindered by a knowledge gap in understanding what obesity as a concept represents to Hispanic families. In Sosa’s (2012) systematic review, it was suggested that a mother’s lack of knowledge “regarding the concept of obesity, including its meaning, importance, causes and consequences, and perceptions on prevention or recognizing barriers to engaging in preventive behaviors, and their role in prevention, will likely affect their probability to engage in preventive behaviors” (p. 396). This finding emphasizes the critical nature of engaging and educating Hispanic families on even the most basic precepts of childhood obesity, in order to change the parental mindset to launch lifestyle changes that will result in decreasing obesity statistics in these children and adolescents.

Published studies have implied that parents substantially influence the risk factors and dietary patterns associated with childhood obesity and the association between individual, environment, and behavior has been cited an important impetus for obesity prevalence in children and adolescents (Champion & Collins, 2013; Sosa, 2012).
Additionally, parents of overweight and obese children consistently misclassify their child’s weight as normal, and were more concerned with their children being underweight versus being overweight with previous research suggesting that mothers associate thinness with lack of health and risk for death (Foster & Hale, 2015; Ochoa & Berge, 2016). This trepidation was further reinforced when parents relayed that family members voiced their concern when children appeared to be too thin (Sosa, Mckyer, Pruitt, Goodson, & Castillo, 2015). Perhaps this finding underscores Mexican mothers’ cultural preference for naturally larger and heavier children, representing a physical frame that was viewed as being healthy (Sosa, 2015; Foster & Hale, 2015). Thus, examining parental perceptions and which obesity determinants play a role in the development of childhood obesity in Hispanic families is critical to understanding how best to address this critical issue in this population.

One identified determinant in the development of this epidemic is acculturation. Acculturation refers to “changes that take place as a result of contact with culturally dissimilar people, groups, and social influences” (Schwartz, Unger, Zamboanga, & Szapocznik, 2010, p. 1).

The literature supported a direct association between an increasing risk of obesity and higher levels of acculturation resulting in barriers to healthy eating and participation in physical activity. In a binational study conducted in Mexico and California it was found that significantly more acculturated Californian children were classified as overweight and obese, and maternal obesity was positively associated with childhood obesity in both samples (Rosas et al., 2010). Additionally, Wiley et al. (2014) found that a greater parental acculturation to the continental U.S. was associated with increased
child noncore food consumption and higher child BMI. Thus, acculturated mothers were more likely to introduce junk foods and non-traditional processed foods that further eroded the “diet quality of Hispanics” (p. 309). The concern is that as Hispanics acclimate to conventional U.S. culture, adopting a more “westernized” diet contributes to a neglect in traditional customs, which have a tendency to provide health-protective effects. However, by embracing a “western” diet, there was an unavoidable increase in consumption of unhealthy foods (Morello et al., 2012; Wiley et al., 2014).

Parents identified several barriers to purchasing and preparing healthier foods including cultural influences over food choices, children’s preference for fast food, and a lack of control over child’s diet (Sosa, 2012). Interestingly, Ochoa and Berge (2016) report that diets of children as young as two years old already include an increased intake of saturated fats, sodium, and calorie dense foods compared to the national dietary guidelines. Ochoa and Berge (2016) also report that children’s food preferences are established by the age of five and establishing healthy habits such as increasing consumption of fruits and vegetables and introducing physical activity may help decrease the barriers that prevent developing healthier eating patterns (Morello et al., 2012; Rosas et al., 2010; Sosa, 2012). However, a study reviewed by Morello et al. (2012), suggested that U.S. born Mexicans consumed a lower percent of energy from core foods than foreign-born Mexicans, which resulted in a tendency to consume unhealthier foods such as fast food, soda, and sweets. Thus, there appears to be a prominent lack of knowledge in acculturated Hispanic parents about healthier food selection, and identifying foods that are more nutrient dense, rich in fiber which would likewise help improve weight (Boudreau et al., 2013; Etelson et al., 2003; Morello, et al., 2012).
These findings are reinforced by a low socioeconomic status and education level (Rosas et al., 2011). Ochoa and Berge (2016) propose that current studies showed an increase in weight status for Hispanic children when they were from a lower social economic status. Furthermore, 27% of overweight and obese Hispanic children and their families were living below the federal poverty level. To this effect, Ochoa and Berge (2016) report that dietary patterns of children are highly influenced by the foods that are made available to them by their parents (p. 443). Thus, Hispanic mothers of low socioeconomic status reported that though they had been given nutritional information from the Supplemental Nutrition Program for Women, Infants, and Children (WIC) “at times did not follow the guidelines and physician recommendations regarding feeding strategies . . . instead identifying their own mothers (abuelas) as the primary source of knowledge for feeding strategies” (Pulgaron et al., 2013, p. 275). Thus, parents acknowledged that though they were given nutritional advice, they did not utilize this information to make healthier choices, understanding that their food choices were highly influenced by their culture, despite these foods being high in fatty content leading to health problems (Sosa, 2012).

In a study conducted with low-income minority parents of preschool-aged children, it was found that Hispanic parents had more permissive nourishing practices than Black parents of the same socioeconomic status. This finding was possibly related to Hispanic parent’s beliefs that being overweight was related to genetics and family characteristics, and a problem seen in adults not children (Barlow, 2007; Sosa, 2012). Interestingly, Sosa (2012) described that Hispanic parents were able to identify when other parents made poor food choices or engaged in permissive feeding styles however,
when asked to reflect on their own practices, these parents reported that they did not engage in these lowly behaviors, but did believe that other parents’ behavior was problematic. Furthermore, in a previous study conducted by Sosa (2012), it was found that when parents were asked to identify childhood obesity consequences, 29% were not able to name short term consequences, such as stigmatization or behavioral issues but were able to understand that obesity led to long term problems such as heart disease and diabetes, but this happened later in the child’s life, not needing immediate attention. Conversely, Sosa (2015) also reported that mothers had become aware of the social and emotional consequences of overweight and obese children, and the propensity to being ridiculed by school mates, believing that such teasing could lead to low self-esteem and depression because of their obesity.

The literature reviews further revealed that low-income mothers did not recognize obesity in their child on the basis of growth curves or BMI values, but only recognized their child’s heaviness when the increased weight restricted their child’s ability to partake in physical activity (Barlow, 2007). Foster and Hale (2015) bolstered this finding reporting that perception of weight in early childhood is strongly influenced by functional limitations, and as long as the child appears well, is active and happy, the child was deemed healthy. Etelson et al. (2003) findings were supported in Sosa’s (2012) which also found that acknowledging obesity as a problem did not just hinge on the parental lack of understanding or familiarity with obesity as a concept, or their unfamiliarity with growth charts to understand if their child was overweight, but comprehended the implications when the child became increasingly sedentary or when the child experienced teasing by peers. Etelson et al. (2003) suggested that perhaps parents have a propensity
to define obesity as a condition when it is accompanied by stark physical impairment, such as compromised mobility or breathlessness while participating in activity. This finding was supported in Sosa (2015) that by observing their children’s behaviors, parents were able to identify when their child became overweight, such as the child running out of energy, adopting sedentary habits, or if the child was eating larger portions. Conversely, parents also recognized that a child’s size was inherited and the child would ultimately shed the excess weight with age, not needing to take anticipatory action (Etelson et al., 2003).

In Sosa’s (2012) theory-guided systematic literature review it was found that mothers were less likely to engage in anticipatory behaviors if they did not understand or perceive the concept of obesity as a meaningful issue or understand its related consequences. And Sosa (2015), found that despite understanding the influence Mexican-American mothers have on their child’s overweight and obesity risk, there continues to be limited research on their perceptions of childhood obesity. Moreover, Foster and Hale (2015) found that parental engagement is necessary in order for weight related interventions to be successful, and this cannot happen if parents lack perception of obesity. Sosa (2012) elucidated several barriers in a parent’s ability to engage in childhood obesity prevention including purchasing, preparation, making or serving of healthy foods, children’s inclination for fast food and sugary beverage consumption, and parent’s confusion over how obesity is determined or measured. Sosa (2012) also identified barriers related to physical activity such as lack of information over proper types and amounts of exercise, lack of recreational opportunities, conflicts in family schedules, and concern over safety at outdoor parks and facilities where their children
could engage in physical activity.

**Interventions of Childhood Obesity**

Turer, Montano, Lin, Hoang, and Flores (2014) posit that effective weight management not only includes parental recognition that their child is overweight, but there is a fundamental need to impart what the meaning of body mass index (BMI) is, how clinicians screen, in an effort to support parental recognition of their overweight children. However, Sosa (2015) found that while parents were told by their primary care provider that their child was overweight, and were able to recognize that screening used age, height, and weight to determine obesity, they did not rely on this marker. Instead, mothers understood that some children were inherently larger, but were considered healthy and considered their behaviors to determine whether the child was overweight. Turer et al. (2014) further recognized the importance of health providers conducting obesity screening during the primary care visit, including the use and review of growth charts with parents, but found that health providers were not reviewing these during the clinic visit.

According to Turer et al. (2014), while parents understand how children may be screened, more than 60% of parents do not recognize that their child is overweight, and in part, health providers are not communicating to parents that children are overweight, and do not encourage follow-up visits. Turer et al. (2014) recognized that this finding was possibly correlated to communication barriers experienced by health providers who were limited Spanish speaking proficient. To this effect, Turer et al. (2014) recognized the importance of having appropriate language services available in the primary care setting. Turer et al. (2014) also reported that parents were not keen to use of particular words
when considering their children’s weight status. Words such as fat to describe an overweight child or diet, which implied food restriction, and parents did not consider food restrictions suitable for a growing child (Ochoa & Berge, 2016; Turer et al., 2014). Thus, in an effort to initiate change, Turer et al. (2014) recommended the use of patient preferred terms to address obesity in the primary care setting.

Ochoa and Berge (2016) report that parental knowledge of obesity risk was critical in determining what constituted a healthful feeding environment, and identified that in Hispanic culture, a good mother gave enough food, was central to the maternal responsibility of having a well-fed child was also a sign of prosperity (p. 443). Moreover, Ochoa and Berge (2016) report in their decade review of literature on childhood obesity, parental style, parent feeding practices, and parental beliefs, knowledge and perceptions about child weight status and obesity risk were associated with weight status (p. 441).

A traditional factor present in Hispanic families is an underlying belief that children who are larger in size equates with good health (Foster & Hale, 2015; Ochoa & Berge, 2016; Pulgaron et al., 2013). However, Pulgaron et al. (2013) reported that Hispanic mothers favored a slender frame for themselves, but preferred a plump frame for their children. This was evident when Hispanic mothers were shown a series of snapshots of young children and the women agreed that the snapshots depicting the somewhat overweight children were considered the healthiest. Sosa (2012) reported that for Hispanic parents, a child’s weight was not indicative of their health status, instead believing that health was based on a “child who was happy and loved, not ill, and well fed” (p. 399). Ochoa and Berge (2016) support this finding in their study that in the
Hispanic culture, parents show love for their children by feeding them well. Moreover, Foster and Hale (2015) found that health associated with feeding was highly valued, and weight status was a lower priority particularly for young children (p. 2). This is a critical finding because Hispanic mothers’ perception about a child’s health being directly correlated to the child’s body mass index (BMI) was actually poor and inaccurate. In essence, Hispanic mothers understood that children with a lower BMI were in poorer health or suffered from disease and debility whereas children with a higher BMI represented good or optimal health (Rodriguez-Ventura, Pelaez-Ballestas, Samano-Semano, Jimenez Gutierrez, & Aguilar-Salinas, 2014; Sosa, 2012). Moreover, Rodriguez-Ventura et al. (2014) reported that “between 32.1 and 87.5%” of mothers perceive the weight of their children who present as overweight and obese as normal (p. 5).

Etelson et al. (2003), suggested that it is vital to address how a parent conceptualizes obesity in their children and that it rests upon clinicians to verify that parents understand they have an overweight child. Turer et al. (2014) found that during the primary care visit, low frequency of communication regarding traditional Hispanic foods or culturally relevant dietary plans were not being examined. However, Turer et al. (2014) reports that in previous studies, culturally tailored obesity interventions have been shown to effectively reduce BMI and improve health behaviors in Hispanic children.

The nexus between these studies demonstrate that Hispanic mothers need more education on their perceptions and conceptualization of obesity and BMI screening. Consequently, there is an overriding need to consider Hispanic parental perceptions, attitudes, and normative cultural values and beliefs about weight, diet and lifestyle, and to
understand how these bio behaviors interrelate with personal and environmental factors within the Hispanic family unit (Barlow, 2007; Pulagron, et al., 2013). In line with these studies, Champion and Collins (2013) reported that because there is a lack of perception and understanding by Hispanic parents with even the most basic principles of obesity in children, resistance to change arises from the lack of parental understanding about the conceptualization of obesity and poor adherence to treatment (Rodriguez-Ventura et al., 2014).

A synthesis of the literature indicated that individual, environmental, and cultural factors coupled with the underlying perceptions of Hispanic parents, the complexity of the sociocultural dynamics signal that culturally appropriate obesity education and interventions are lacking, need further exploration, and require cultural tailoring (Turer et al., 2014). Accordingly, Champion and Collins (2013) suggested that the need for culturally appropriate interventions may make a difference in initiating change in this population and such tailored interventions are consistently supported by the evidence. Educating Hispanic families on the concept of obesity, familiarizing them with standard screening tools, understanding their child’s weight in relation to BMI, and assessing knowledge of healthy food selection and eating patterns, will foster change and improve outcomes. Thus, multidimensional nuances that need further evaluation encompass individual and environmental factors on reducing sedentary behaviors, understanding obesity risk factors, body composition, and anthropometric measures (Etelson et al., 2003). It is also vital to consider socioeconomic and psychosocial factors to increase responsiveness and knowledge through culturally appropriate interventions to effect change (Sosa, 2012).
The home environment is a key influence on diet and physical activity of children and examining the factors that impact obesity is critical. To this effect, Sosa (2015) reported that mothers recognized that the provision of their children’s diet was their responsibility and recognized that they were ultimately accountable for what foods they offered in their home. Furthermore, mothers were cognizant that intrinsic to the Mexican diet included foods high in fat, salt and oils, and breads and sodas, but were unwilling to prepare or eat non-ethnic foods except fast-foods (Sosa, 2015). Moreover, mothers also felt it was their responsibility to regulate television and video game intervals, understanding that inactivity contributed to obesity, but were not proactive in initiating change (Sosa, 2015). Previous research has suggested a correlation with obesogenic risk and home environmental factors such as permissive parenting styles, feeding practices, and parental modeling as influencing children’s behaviors (Ochoa & Berge, 2016).

Parental style deals with permissive parental behaviors, and Ochoa and Berge (2016) found that indulgent mothers cater more to their children’s unhealthy food preferences, serving them less healthy foods, encourage less physical activity, and enable children to engage in more sedentary behaviors. Permissive parental feeding practices include encouraging children to eat more food or finish everything on their plate, allowing children to have selective preferences, which set the tone for favoring calorie dense or rich in fat foods. Furthermore, Wiley et al. (2014) recognized the importance of continuing to explore obesogenic factors that have to do with portion size, screen time, and physical activity.

Zoorob and colleagues (2013) hypothesized and support recommendations that not only include developing culturally-based interventions to meet the needs of
ethnologically diverse populaces, but those that also recognize the importance of adult health literacy in Hispanics and persons for whom Spanish is the primary language. Zoorob et al. (2013) found that those whose health literacy was at a less than basic level of interpretation and understanding of learning materials, were less likely to engage in anticipatory or preventive behaviors that could improve health outcomes. They further endorsed that interventions should include the evaluation of Hispanic parents for “low levels of health literacy since adult health literacy among U.S. ethnic groups is lowest for Hispanics and persons for whom Spanish is their first language” (p. 109).

Finally, Champion and Collins (2013) acknowledged that inequities in Mexican-American adolescents exist by virtue in “differences in power and privilege based on access to healthcare, educational and social networking opportunities and increased psychosocial barriers that result in poor health outcomes” (p. 609). These inequalities, in addition to this population’s conceptualization of obesity and its cultural nuances, must be addressed in order to curb the prevalence of obesity in these children and adolescents.

**Childhood Obesity Screening Tools and Measures**

A search for childhood obesity screening tools was undertaken and yielded 97 articles with the majority of these articles focusing on tools that use body mass index (BMI). As discussed earlier, BMI percentile is a measure of relative weight rather than adiposity and is the preferred measure for assessing weight status and degree of obesity.

The literature revealed that body mass index (BMI) has been adopted as the standard anthropometric assessment of under and over-nutrition and measure and utilizes gender-specific BMI-for-age percentiles (Nicholas, Dennison, de Long, Prokorym, & Brissette, 2009; He and Beynon, 2006; Zuguo et al., 2002). However, BMI does not take
sexual maturation, race or ethnicity into account, which are independently correlated, and cannot measure body fatness, but provides a statistical, rather than inherent description of risk. (Seibert et al., 2015). In 2000, the Center for Disease Control and Prevention (CDC) established the use of BMI as a precise screening tool in determining obesity in children ages 2-20 (see Appendix A and B). Due to its specificity, moderately high sensitivity and positive predictive value at BMI levels $\geq 95\%$, BMI continues to be used in the clinical setting due to its validity, practicality, and cost effectiveness (Seibert et al., 2015; Zuguo et al., 2002). As such, body mass index (BMI) uses anthropometric measurements to determine if an individual can be classified as underweight, normal weight, overweight or obese. Children and adolescents classified as underweight are in the less than 3rd percentile; whereas a normal BMI is defined as those who fall within the 5th and 84th percentile. Overweight is defined as a BMI at or above the 85th percentile, but below the 95th percentile and obesity is defined by having a BMI at or above the 95th percentile for children and teens of the same age and sex (CDC, 2015a).

The 2007 American Academy of Pediatrics (AAP) obesity guidelines recommended that all children be screened for BMI during the well-child visit. The rationale for this is that the measurements taken at the clinical setting are more precise than self-reports or a parent’s perception of their children’s height and weight. Thus, in order to gauge the prevalence of obesity more precisely, it is vital to obtain accurate measurements of BMI, and to measure this, a clinician requires a weighing scale and a stadiometer. BMI is calculated as weight (kg) divided by height (m) squared and the number that is yielded is then quantified by using a table or chart categorizing a person’s score in a percentile range (CDC, 2015a). Obtaining these measurements during well-
child visits gives the clinician an opportunity to assess the values in conjunction with other clinical data, explain its significance, and address concerns immediately with parents (Sosa, 2012).

He and Beynon (2006) supported that the advantage of using BMI-for-age in overweight children is that age is taken into account in BMI calculations. The rationale for utilizing BMI-for-age is that it accommodates a child’s body build and body composition, which change with age. However, as noted by He and Beynon (2006), a limitation of BMI is that it does not determine the difference between interpreting increased fat mass value versus lean mass value.

While the BMI is the standard tool used in clinical practice, it is not regarded as diagnostic, as it cannot evaluate diet, physical activity, or other health assessments to determine health related issues or risk factors associated with obesity. More importantly, BMI does not evaluate lifestyle behaviors, which are deeply rooted within the family dynamic. As discussed previously, the literature has well established the significance of educating the Hispanic family on screening tools such as the BMI and its high reliability standard of anthropometric assessment of under and over-nutrition and understanding a child’s weight in relation to BMI (Nicholas et al., 2009; Zuguo et al., 2002).

A second screening tool that is currently being touted is the waist circumference measure. According to the CDC, a greater risk for obesity related comorbidities exists when there is excessive abdominal fat. As with BMI, waist circumference is not diagnostic of body fatness, and cannot distinguish between muscle and adiposity however, the evidence indicates that waist circumference coupled with BMI predicts a person’s health risk potential more effectively and is better than using BMI alone (Ford,
Maynard, & Li, 2014). The National Heart, Lung, and Blood Institute (NHLBI, 2015), also supports waist circumference as a stronger marker of health risk for persons compared to BMI, as well as the utility of BMI and waist circumference measurements together in predicting obesity-related health risk. Based on their recent studies, the NHLBI recommended that clinicians assess the waist circumference of their patients however, this recommendation has not been widely accepted or implemented in clinical practice as it is limited by numerous factors (NHLBI, 2015). Some of these factors include the lack of consensus for its measurement, lack of standardized waist circumference charts, and there are no accepted standards on what would be considered abnormal waist circumference percentiles (Seibert et al., 2015).

In a study conducted by Spolidoro and colleagues (2013), it was suggested that abdominal fat produces a higher risk factor for cardiovascular and metabolic disease compared to general adiposity. They concluded that waist circumference in children and adolescents is particularly valuable in screening for these risks. In spite of these findings supporting waist circumference as a better indicator of obesity, it is body mass index (BMI) that continues to be utilized as the standard tool for measurement of obesity. This finding is particularly critical among Hispanic parents because knowledge of screening tools including BMI or the growth curve were not significant to their understanding of obesity or its measurement, reinforcing the need to educate parents on the importance of how and why children are screened.

The literature revealed that while there are various pediatric obesity screening tool kits that exist such as the World Health Organization (WHO) or Park Nicolett Pediatric Obesity Tool Kits, which look at prioritizing areas for action in preventing obesity or
have developed clinical protocols or algorithms for screening and interventions for children at risk for obesity and adverse health outcomes. As with the previous screening tools, these kits do not address the dynamics or barriers Hispanic families face in conceptualizing obesity to make the needed lifestyle changes. Additionally, only a limited number of studies referenced some of these screening survey tools, but did not appear to be utilized broadly across clinical practice. Finally, while expert committee recommendations from entities such as the U.S. Preventive Task Force, American Academy of Pediatrics (AAP), or The National Collaborative for Childhood Obesity Research, explore assessment, behaviors, methodologies, and interventions, these recommendations address childhood obesity in general and are not ethnic-specific.

One of the few models that has been reviewed extensively in research studies is the 5-2-1-0 Let’s Go! Model which was developed as a five-year demonstration pilot project in an effort to examine health and economic impacts of childhood obesity (Rogers et al., 2013). This model was developed with two main mechanisms: prompting families to make healthy food choices and implement changes to their environments by assessing eating habits, limiting screen time, engaging in physical activity, and limiting consumption of sugary beverages (Rogers et al., 2013). Thus, the aim of this model is to assess awareness, knowledge, and healthy behaviors in adults and their children to reinforce the link between recommended behaviors and maintaining good health (Rogers et al., 2013). While this model was not specifically developed for any particular ethnic group, it does provide a solid, generalized, obesity questionnaire tool. This model has been used successfully in numerous studies, with outcomes that have demonstrated improved parental awareness. However, only a few longitudinal studies were identified
demonstrating its long-term success. One of the longitudinal studies identified was a five-year study conducted by Rogers et al. (2013), whose findings suggested that parental exposure to a community level intervention, such as the 5-2-1-0 Let’s Go! model was correlated with achieving higher levels of parental knowledge thereby increasing the likelihood that children adopted anticipatory behaviors to prevent obesity.

The 5-2-1-0 Let’s Go! Model is based on the premise that children will eat 5 or more fruits and vegetables, reduce screen time to 2 hours or less, exercise more than 1 hour and reduce sugary drinks to 0. Toolkits have been developed for six different settings “to reach families where they live, learn, work, and play to reinforce the importance of healthy eating and physical activity” (Let’s Go!, 2015). The 5-2-1-0 Let’s Go! website offers extensive resources to help educate families about obesity and have adapted this model successfully for a variety of settings (Let’s Go!, 2015). The toolkits in the 5-2-1-0 Let’s Go! model include the Healthy Habits Questionnaires that are a self-administered 10-item questionnaire that seek to acquire information about a child’s behaviors to help the provider identify areas that need attention. While the 5-2-1-0 Let’s Go! model has been utilized successfully in many studies, one of the limitations associated with the 5-2-1-0 Let’s Go! model is that it does not address the cultural nuances specific to any ethnic group.

Currently, the selected county institution for this DNP project utilizes BMI and a compulsory form developed by the Child Health and Disability Prevention’s program Staying Health Assessment (SHA) form (see Appendix C). The SHA is a general screening questionnaire to assess lifestyle behaviors in various areas including safety, nutrition, physical activity, amongst other areas. In understanding the needs of Hispanic
families in relation to obesity, some of the limitations that were identified in analyzing the form, is that it is broad, not obesity specific, and does not identify barriers to change or address barriers to learning.

The SHA form was developed in the 1990s, and updated in June 2013 in collaboration with Medi-Cal managed care plans by the California Department of Health Care Services (DHSC) for the Child Health and Disability Prevention Program (CHDP). Child Health and Disability Prevention Program CHDP is a preventive program that is geared towards providing periodic health assessments which include health and developmental history, complete physical exam, nutrition and behavioral assessments, age appropriate immunizations, vision and hearing screenings, lab screenings, health education and anticipatory guidance. These care-coordinated services are made available to low income children in California via private physicians, local health departments, community clinics, amongst other means and include referrals to other medical specialties, mental health, and other programs such as the Women, Infants and Children (WIC) Nutrition Program (DHCS, 2016).

The SHA consists of seven age-specific pediatric questionnaires and two adult questionnaires, available in English and in all Medi-Cal threshold languages (Arabic, Armenian, Chinese, Farsi, Hmong, Khmer, Korean, Russian, Spanish, Tagalog, and Vietnamese). Plan providers are required to use and administer the SHA to all Medi-Cal beneficiaries as part of the Initial Health Assessment (IHA) and periodically re-administer it according to contract requirements (DHCS, 2016). As such, the clients of the county pediatric clinics are 100% Medi-Cal beneficiaries and are required to complete this questionnaire.
Within the SHA family of forms, another potential screening tool that was identified was the *What Does Your Child Eat*. This tool is also part of the CHDP program, which helps to identify risk for nutrition-related problems that may affect growth and development, but is not obesity specific. Overall, these forms appear to be general in nature. They encompass a review of the child’s health status to ensure they are receiving adequate healthy nutrition, but do not necessarily assess for parental knowledge of obesity bio behaviors, BMI, screening tools currently used nor include any type of obesity screening. These forms do assist health providers with counseling and referrals, should a deficiency in nutrition or development be identified.

Due to the SHA’s broad focus however, the SHA does not address cultural attitudes or beliefs, perceptions, or barriers to obesity or its prevention. Moreover, no literature identified the efficacy or use of the SHA form in obesity screening among children and adolescents. Thus, after a thorough analysis of the CHDPs SHA and its accompanying forms despite, its state-wide use in primary care settings, its use as a sole screening tool appears to be less than an optimal choice for working with the Hispanic population.

In summary, the literature has established the importance of screening Hispanic children and adolescents at every well-child visit given the high prevalence for obesity in this population. However, Hispanics present a unique challenge given the bio behaviors and cultural dynamics associated with the Hispanic family unit. Currently, there is no obesity screening tool designed for Hispanic children and adolescents that look at individual factors associated with knowledge deficits, socioeconomic status, lifestyle influences, acculturation, nutrition, and level of physical activity.
Therefore, it is the Nurse Practitioner’s belief that by developing a culturally modified addendum tool to the currently utilized and required SHA forms, an important contribution may be made in regard to how Hispanic children and adolescents are screened for nutritionally related problems. This addendum tool incorporates questions gleaned from the knowledge deficits identified by the literature review and tailors existing questions to suit the cultural nuances of the target population’s needs. Using elicited information from Hispanic parents that targets their perception of health versus obesity, may help to breakdown the current barriers that prevent meaningful assessment and obesity screening in Hispanic parents and their children. This DNP project’s purpose is further supported by the literature as it was emphasized that childhood obesity screening measures include identifying family-based interventions that target the entire family unit. This finding was reflected in many studies that highlighted Hispanic parental dynamics, beliefs and attitudes as key contributing factors to the obesity epidemic that directly impact their children (Rogers, 2013; Brotman et al., 2012).
METHODS

After an extensive review of the literature, the 5-2-1-0 Let’s Go! model appeared to be the most appropriate because of its general acceptance in clinical practice and has been adapted for use by the American Academy of Pediatrics (AAP) for preventive counseling. The premise of the 5-2-1-0 Let’s Go! Model is to assess knowledge and healthy behaviors in adults and their children through prompting families to make healthy food choices and implementing changes to their environments. Though similar tools have been utilized in practice, it is not known how these less recognized tools have been implemented in clinical practice.

A literature gap exists in that there is an absence of tools which assess knowledge deficits specific to Hispanic families including the conceptualization of obesity, screening tools, bio-behaviors, socioeconomic status, and normative cultural values. This gap thus supports the need to implement an adapted screening tool that incorporates specific dynamics targeting Hispanic families to increase their awareness of obesity, assess knowledge deficits, examine the social environment in these adults and their children, and implement interventions that will result in meaningful lifestyle modifications.

The 5-2-1-0 Let’s Go! organization was contacted by this author to obtain permission to use its model, and was advised that it was acceptable to simply download the appropriate setting toolkit from their website. After a thorough review of the website and toolkits, the healthcare module was determined to be the most appropriate toolkit for a pediatric clinical setting and was selected for this project accordingly. Under the healthcare module, the 5-2-1-0 Healthy Habits Questionnaire is available in both English and Spanish languages (see Appendix D and E) and was accessed to assess obesity.
related behaviors for providers. These questionnaires target children and adolescents ages 2-9 and 10-18 years of age respectively, and predominantly gather nutritional data to help providers focus on problem areas. The toolkit includes educational outreach, supporting materials and training on healthy eating and physical activity for healthcare providers working with overweight and obese children and adolescents and their families. This DNP project built upon the existing healthcare module, adapting it to meet the needs of the target population.

Given the success of the 5-2-1-0 Let’s Go! project since its initiation in 2006, this model appeared to be the most appropriate, given its inclination to increase parental knowledge, a key educational deficit identified in the literature as lacking. Accordingly, the questionnaires were adapted to include dietary preferences, BMI knowledge, and socioeconomic status including acculturation and education level, and provided in English and Spanish versions to participants (see Appendix F and G).

The Nurse Practitioner then reviewed the addendum with the parent, identified knowledge deficits, and immediately provided culturally appropriate educational interventions, resources and teaching materials for the participants. Parents and children were then asked to verbalize three areas that were discussed to determine synthesis of the covered topics. In order to achieve better childhood obesity screening within the Hispanic population, the Nurse Practitioner was able to obtain baseline anthropometric measurements on a total of 13 Hispanic children and adolescents. The Nurse Practitioner then administered the culturally modified screening tool as a 13-item survey to parents and children that included the target areas identified in the literature review as critical in initiating change within the target population.
The participant’s progress will be assessed via a telephonic check-in, and will be scheduled for a six-month face-to-face follow-up appointment, where final anthropometric measurements of the child/adolescent will be taken. The Nurse Practitioner will address the success and barriers encountered in implementing healthier behaviors, determine and reinforce additional learning needs or interventions, and determine if BMI values decreased by at least a 3-5% since the children’s baseline measurement.

**Project Design**

This DNP project used a quality improvement framework. Quality improvement projects encompass processes whose tasks have been developed to systematically evaluate methods to implement changes that improve health outcomes (Chang et al., 2014). The literature supports obesity-linked interventions are most effective when providers can incorporate cultural nuances in the plan of care to improve delivery of care. Understanding the barriers Hispanic families’ encounter that propagate resistance, will enhance the multidisciplinary team’s ability to initiate meaningful obesity screening and assessment in children and adolescents to implement culturally tailored and family centered interventions through the implementation of a modified screening survey.

**Sample**

The proposed addendum and educational interventions were administered to 13 Hispanic parents of overweight and obese children and adolescents. The Nurse Practitioner targeted children and adolescents whose BMI was at or above the 85% as defined by the CDC for overweight or obese children. This author utilized a *purposive* sampling frame to select participants. According to Polit and Beck (2014), purposive
sampling “uses researcher’s knowledge about the population to select sample members” (p. 279). Inclusion criteria consisted of random Hispanic children and adolescent boys and girls between the ages of 6 and 17 years of age whose BMI was greater than 85%, and who were selected from the patient population at the pediatric clinics. Exclusion criteria consisted of all children and adolescents who were not Hispanic, less than 2 years of age, and those children whose BMI was less than 85%. There were no recruitment efforts undertaken, since the sample was comprised of patients who were prescheduled at the county clinic. There was no compensation offered to participants.

**Setting**

The project took place at a large Southern California county pediatric clinic. The county pediatric clinics are located in East Los Angeles, California, linked with the Department of Children and Family Services (DCFS) and serves as a medical home for foster children and other victims of violence within Los Angeles County. The clinics are comprised of a multidisciplinary team that evaluates the child as a whole, providing comprehensive services in primary care, specialty referrals, mental health therapy, Fetal Alcohol Spectrum Disorder (FASD) screening and testing, and other medical services that are housed in the outpatient setting. The team was comprised of physicians, this Nurse Practitioner, staff nurses and other paraprofessionals, who work tirelessly to ensure that this vulnerable population of children had access to medical services.

The pediatric clinics provide services to children between 0 and 19 years of age regardless of ability to pay. Some have an open case with DCFS, and have been identified as “at risk” because of physical abuse, general or medical neglect. These children may or may not be detained from biological parents or are placed in foster care
or group home placements. Moreover, these children and adolescents are Medi-Cal entitled beneficiaries by virtue of being in the system, and are eligible to receive comprehensive medical and mental health care, developmental assessments, education and health promotion, and other medical services or referrals. While the pediatric clinics predominately serve the foster care population, the county pediatric clinic populace is primarily comprised of low-income Hispanic and Black children (Schneiderman et al., 2013).

**Procedure**

The primary investigator administered the modified survey to the 13 study participants and their parents. The modified survey was reviewed for appropriateness by the faculty advisor as well as the respective institutional IRB Review Boards. The survey consisted of 13 questions, four yes and no, and the remaining questions consisting of individual responses that helped steer the educational interventions. The survey was a double-sided, English and Spanish questionnaire with a literacy level preserved at the 8th grade level per the University IRB protocol.

**Ethical Approval and Consent**

Protection of human subjects was sought from the respective institutional review boards and approved in October 2016.

**Instruments**

The county clinics collect children’s demographics, anthropometric measurements, and characteristics including birth date, gender, ethnicity, weight in kilograms, and height in centimeters as a standard of care and practice. Weight in kilograms is measured utilizing the Scale-Tronix instrument and height in centimeters is
measured with the Seca height measurement instrument at each visit. This information was recorded by nursing staff in the electronic health record. BMI was automatically calculated and plotted, and reviewed by the provider prior to their visit with the patient. The adapted questionnaire is a 13-item fill-in-the-blank and of a dichotomous make-up. It was given to the participant’s parents to fill out at the time of registration as part of the registration paperwork. These forms were then reviewed by the provider, parents, and participants simultaneously at the time of the intervention.

According to the CDC (2015b) the AAP recommends the use of BMI to screen for overweight and obesity in children beginning at two years old, and not sooner because of the rapid changes in body composition during the formative years. BMI in children, though calculated in the same fashion, is expressed as a percentile. However, despite the evidence supporting BMI as the standard screening tool in childhood obesity, the literature indicates that for Hispanic families, the use of BMI is poorly understood (CDC, 2015b).

Data Collection

Data collection took place over the month of November 2016 and consisted of obtaining a baseline weight, height and BMI measurements for a sample of 13 Hispanic children and adolescents, who met the stated project participant inclusion criteria. The adapted survey questionnaire was given to the participant’s parents to fill out in conjunction with the required SHA form currently used at the institution during the time of registration as part of the registration packet. However, the SHA form was not reviewed as part of the educational intervention. After reviewing the questionnaire and assessing for knowledge deficits, the Nurse Practitioner identified and discussed dietary
and behavior modifications based on the individual educational needs of the participants and their parents to determine what educational materials and teachings were appropriate to maximize learning.

**Data Management**

In accordance with the Health Insurance Portability and Accountability Act of 1996 (HIPAA), all paper forms that were reviewed and discussed with research participants were shredded according to institution policy in an effort to protect confidentiality. Demographics and anthropometric measurements were recorded into the child’s electronic health record, for later access, comparison, and review of baseline data. Of the participants identified for this study, there were no cases where obesity was significant for underlying or undiagnosed conditions, and thus no specialty referrals were made per clinical standard of care protocols. The Nurse Practitioner recorded the data collected for analysis in a password protected Word-Excel spreadsheet that only she had access to. All data was de-identified. No additional identification or linkage was given about the patient’s name, medical record number, or diagnosis. Answers to the modified survey questionnaire and baseline anthropometric measures (BMI) were also entered for statistical analysis of the findings at the final six-month evaluation.

The American Academy of Pediatrics (AAP) Institute for Healthy Child Weight in conjunction with Barlow and colleagues’ Expert Committee (2007) recommends that children return for assessment and management of childhood obesity within a three to six-month period to determine BMI improvement. Thus, after discussing with the Doctoral Chair and committee, the decision was made to reevaluate patients via a telephonic check-in and then plan for a final face to face assessment with real time
anthropometric measures to determine if any decrease in body mass index (BMI) occurred. Given the population the county clinic serves in conjunction with appointments being booked well in advance, the participants preferred a six-month follow up citing such issues as transportation, work schedules, and or children not missing any school.

The parents were then informed that the child would be assessed at baseline, and followed up for progress during a telephonic check-in to evaluate progress, efficacy of educational interventions and reinforcement, and identification of any additional barriers. However, due to the inability to ascertain the validity of the home instruments used to report weight and the inability to determine whether there was a change in height, no self-report anthropometric measurements were collected from participants during the progress check-in. At the end of the six-month interval, participant progress will be reevaluated, successes and barriers will be discussed for intervention reinforcement, and simultaneous anthropometric measurements will be taken and compared to baseline to determine if the tailored educational interventions improved BMI. Improvement will be measured by a decrease in weight and/or BMI by a total of 3-5% points at the end of the six-month period.
RESULTS

Thirteen parent-child dyads participated in this study. Twelve of the parent participants were female (93%), while only one of the participant parents was male (7%). Ten of the participant parents reported that they were immigrants from a Latin country predominantly Mexico or El Salvador (77.5%). Parents were neither queried as to marital relationship status nor parent participant age. There was some variation in the length of time parents had resided in the United States as immigrants, ranging from 19 to 30 years (see Table 1). Parents’ level of education ranged from five parents reporting an elementary school education (38.5%), two parents reported some college or had graduated from college (15%), and approximately six parents reported the equivalent of a high school education (46.5%) (see Chart 4). The mean age for youth participants was 11.92 ($SD = 3.70$). Five female youth (38%) and eight male youth were (62%) (see Chart 1). The demographics, baseline anthropometric measurements and baseline habits tables, and various charts are illustrated below. A more detailed analysis of the findings is addressed in the discussion section of this paper.

Finally, the objectives of this DNP project have been met thus far. The modification of the addendum tool proved significant because it homed in on areas specific to each participant’s knowledge deficits, which were consistent with the literature review. Tailored educational interventions were then provided to both parents and youth with accompanying handouts, leaflets, and community resources, which were reinforced at baseline and again at the telephonic progress check-in based on participant identified needs. At the end of the baseline educational interventions, learning was assessed with all the participants being able to verbalize three things that were learned
from the session. Finally, at the conclusion of the 6-month study period, participants will be returning for their final physical evaluation and final anthropometric measurements, this data will be recorded and analyzed via a pre- and post-test to determine efficacy of educational interventions and if a statistically significant decrease in BMI occurred.

Table 1

*Baseline Habits: Anthropometric Measures*

<table>
<thead>
<tr>
<th></th>
<th>N</th>
<th>Range</th>
<th>Mean ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Participants: Child</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Age</td>
<td>13</td>
<td>06 – 17</td>
<td>11.92 ± 3.70</td>
</tr>
<tr>
<td>Height</td>
<td>13</td>
<td>50.28 – 67.44</td>
<td>60.04 ± 6.62</td>
</tr>
<tr>
<td>Weight</td>
<td>13</td>
<td>82.1 – 204.2</td>
<td>143.04 ± 3.52</td>
</tr>
<tr>
<td>BMI</td>
<td>13</td>
<td>94 – 97</td>
<td>96.53 ± 0.87</td>
</tr>
<tr>
<td><strong>Participants: Parents</strong></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Average length in the US</td>
<td>13</td>
<td>19-30</td>
<td>22.4 ± 7.94</td>
</tr>
</tbody>
</table>
Table 2

*Baseline Habits: Parent/Child*

<table>
<thead>
<tr>
<th>Participants: Parent/child</th>
<th>N = 13</th>
<th>Percentage*</th>
</tr>
</thead>
<tbody>
<tr>
<td>Consume/Purchase fried, fast, junk foods?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>13</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Access: Supermarket/Recreation</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes (both)</td>
<td>13</td>
<td>100%</td>
</tr>
<tr>
<td>No</td>
<td>0</td>
<td>0%</td>
</tr>
<tr>
<td>Physical Activity</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Yes</td>
<td>10</td>
<td>80%</td>
</tr>
<tr>
<td>No</td>
<td>3</td>
<td>20%</td>
</tr>
</tbody>
</table>

*Note: Percentages may not sum to 100 due to rounding.*

Table 3

*Baseline Habits: Averages*

<table>
<thead>
<tr>
<th>Participants</th>
<th>Percentage* ± SD</th>
</tr>
</thead>
<tbody>
<tr>
<td>Average activity</td>
<td></td>
</tr>
<tr>
<td>Time spent in Physical Activity (hrs/week)</td>
<td>2.23 ± 1.69</td>
</tr>
<tr>
<td>Time spent on TV/Video/Media (hrs/week)</td>
<td>3.0 ± 2.31</td>
</tr>
<tr>
<td>Time spent outdoors: playing, sports, being active</td>
<td>00 ± 0.00</td>
</tr>
<tr>
<td>Average consumption</td>
<td></td>
</tr>
<tr>
<td>Eat fried/Junk/Fast food/servings/week</td>
<td>3.23 ± 1.69</td>
</tr>
<tr>
<td>Eat fruits/vegetable/Week</td>
<td>1.92 ± 1.18</td>
</tr>
<tr>
<td>Sugary Drinks (8 oz/daily)</td>
<td>4.38 ± 1.75</td>
</tr>
</tbody>
</table>

*Note: Percentages may not sum to 100 due to rounding.*
Figure 2. Participant gender: Youth.

Figure 3. Parent: Do you know what BMI is?
**Figure 4.** Do you believe your child is overweight?

![Bar chart showing the response to the question: Do you believe your child is overweight? with 3 people (23%) answering no and 10 people (77%) answering yes.]

**Figure 5.** Highest education level: Parent.

![Bar chart showing the highest education levels of parents with 5 individuals having an elementary education, 6 having a high school diploma, 1 with some college education, and 1 with a college graduate degree.]
Figure 6. Purchasing input: Parent.

Figure 7. Change 1 thing: Parent/Youth.
Figure 8. Participant Progress.
DISCUSSION

An analysis of nationwide provider statistics found that Hispanic children and adolescents were less likely to receive preventive pediatric obesity counseling during office visits versus other ethnicities (Branner, Koyama, & Jensen, 2008). Thus, if we are to make transformative progress in obesity prevention in Hispanic children and adolescents, there is a fundamental need for clinicians to engage Hispanic families during clinic visits to address knowledge deficits, specific needs and barriers, and to provide tailored, culturally sensitive educational interventions, which are geared towards the initiation, management, and prevention of obesity in this populace.

While the sample size of the study was not robust \((n =13)\), the findings revealed an initial critical problem in that the concept of mass body index (BMI) was not understood in 93% of the participants regardless of language, level of education, or acculturation. Only one participant was able to identify its use as “the doctor takes the height and weight and calculates a number that tells him if the kid is fat.” However, the participant was not familiar with or able to verbalize what the actual value represented, if a higher or lower BMI was better, and what was considered normal versus overweight or obese.

Two (7%) of the 13 participants reported that they understood what BMI was “a little,” but when queried further, were not able to explain the concept to the primary investigator, but associated BMI with the child being “llenito o gordo,” which translates to full or fat, but this was “bueno” which translates to a “good” thing. In essence, for these participants, BMI simply correlated to being full or fat, which was reportedly a good thing but not necessarily overweight or obese. Though the children were deemed
overweight or obese by clinical standards, because the clinician told them that is what the BMI value represented, it appeared to have no bearing as participants had no understanding of BMI since their ordinary perception was that being ‘illenito” was a good thing.

One participant acknowledged that though her son had been deemed fat by the doctor, she did not agree because he was in fact not fat since he didn’t eat tortillas or too much meat. This finding is consistent with Hale and Foster’s (2015) conclusion that in some cases physician’s input and assessment was rejected. In addition, the only parent who believed that being bigger was healthier, was queried about her thoughts as she didn’t think of him as being overweight, but instead believed that her child was bigger, bigger as in being “healthier” and that being “delgado,” or thin meant he was not being fed well and believed her child should not look or be thin. This supports what Pulgaron et al. (2013) established in their study, that within the Hispanic community, there is an underlying belief that children who are larger in size, not out of breath, not larger than their peers are fine and equates with good health (Foster & Hale, 2015).

In terms of acculturation, ten of the 13 (77%) participants were immigrants from a Latin country including Mexico and El Salvador, while the other three (23%) were 1st generation Americans whose parents were immigrants from the countries noted above. Participant parents reported immigrating to the United States as adults, with a median presence of 22.4 years. As discussed earlier, the literature well supports a direct association between obesity and increasing acculturation, and was identified as a barrier to healthy eating or participating in physical activity (Rosas et al., 2010; Sosa, 2012). The review of literature also revealed a clear nexus related to the acclimation of the
western diet and lifestyle which promotes unhealthy behaviors such as participating in less physical activity, consumption of fast food, and increased sugary beverage intake among many other Western behaviors and determinants.

Nine of the 13 participants (70%) were Spanish speaking only, while four participants (30%) were bilingual in English and Spanish. Only two (15%) of the participants reported having some college or had actually graduated from college, while the rest of the participants reported attaining a grade school or high school education in their home countries (85%). Participants were not asked whether they had actually completed their studies.

Parents and children were asked about access to supermarkets, parks, or other community resources, and all of the participants reported that they had no problems with access. This is perhaps due to all of the participants reporting that they resided in close proximity to local resources. However, the literature establishes that access has been a historical barrier to engage in childhood obesity preventive behaviors (Sosa, 2012). Interestingly enough, a common theme reported by participant youth is that they were inclined to stay indoors because of computer or video games, preference for television, did not like being outdoors, or simply had no desire to go outside. When queried about physical activity, all participants reported that they were given physical education at school, but this was limited to one to two times per week as part of the curriculum. Some children reported not having any physical education at all at the high school level. The average time spent in physical activity was 2.23 hours per week, which is less than the recommendation by U.S. Department of Health and Human Services, as cited in Bader (2015), which suggested that elementary age school children get 2.5 hours of exercise per
week and 3.75 hours a week for those students in junior and senior high school. The preliminary findings among the participants thus far are consistent with the current trend reported by the Harvard School of Public Health study, as cited in Bader (2015), which also found that less than half of U.S. children were getting acceptable amounts of physical exercise. In addition, the participant children in middle school or high school reported that they were only offered physical education twice a week or not at all, which is consistent with the growing trend in schools offering less physical education periods (Bader, 2015; Champion & Collins, 2013).

When queried about fast food consumption, all participants admitted that they consumed and/or provided fast food on an average of 3.23 times per week and attribute this to work schedule, convenience, or preference on the child’s part. Fruit and vegetable consumption was also dismal with participants only averaging 1.92 servings on a weekly basis. In addition, when asked about sugary beverage intake, all participants agreed that this was a problem area, stating that while they did drink water, it was very limited, often opting to drink sugary beverages such as whole milk, sports drinks, juice, or Sunny Delight on an average of 4.38 (8oz) servings on a daily basis.

Parents reported that when making food purchasing decisions in their households, mothers were making these decisions with input from their children in five of the 13 families (38.5%). While two of the families (15%) reported letting grandparents make the purchasing decisions, one family (7%) allowed all the family members to have input, while the other five families (38.5%) reported that both mother and father had input into what was being purchased, but also allowed their children to have some input. A common theme among families with regard to purchasing decisions was that parents
allowed children to have input in purchasing decisions and allowed children fast food, unhealthy snacks, and treats to reward for good behavior or doing well at school. This finding is consistent with the Pulgaron et al. (2013) study that found that parents relied on others, such as the abuelas (grandmother), for feeding strategies or food purchasing decisions.

Another area that was addressed was the amount of screen time children spent on a daily basis. Children reported spending an average of three hours on media, including television, tablets, cell phones, computers, and videogames. Interestingly, there were two participants who admitted that they spent up to an average of six hours each day on media. Ochoa and Berge (2016) report that extensive research has confirmed the link between TV viewing and obesity in children who viewed more than 2 hours of screen time per day. Ochoa and Berge (2016) found a high occurrence of TVs in Hispanic children’s bedrooms, noting the strong correlation between inactivity and the amount of time spent watching TV, and fewer limitations placed on them by parents. These findings, while not generalizable, support that Hispanic children are spending at least an hour more than the AAP and 5-2-1-0 Let’s Go! model recommendations to limit screen time to less than two hours on a daily basis. A common theme identified in excessive screen time was that parents were not able to offer an explanation, but stated that they believed that their children were watching an insignificant amount of television, because the children were doing their homework and going to bed early. Moreover, parents acknowledged that though their children did spend time on media, they admitted that it was an unknown quantity of time, which they believed might be due to the necessity of school related activities or work.
After discussing and providing the educational interventions based on the identified individual needs, participant parents and children were queried on one thing they wanted to change as a family unit: sixty-two percent of the respondents reported that they wanted to eat healthier and consume less junk food, 16% wanted to increase their physical activity, and 22% of the children stated they wanted to decrease sugary drink consumption. Sugary beverage intake is one area that though prominent in the literature as a contributor to obesity in Hispanic children and adolescents, was not a target of this research study, but is a significant issue necessitating further examination and analysis.

Overall, participant parents and youths appeared to be cognizant that their dietary habits were unhealthy, were not making healthy choices, and reported eating such things as sodas, chips, cookies, ice cream, cake while at school and at home. A common theme among parents was the surprise that their children were consuming more junk food at school as well, opting for sweets, chips and sugary drinks, while parents believed that schools were offering healthier choices.

In an effort to evaluate the efficacy of the modified survey upon the target population and to ensure that the educational interventions were tailored to meet the needs of these participants, the answers were thoroughly reviewed with both parents and children. Once problem areas were identified, educational and health promotion interventions were provided via the utilization of educational leaflets, handouts, and community resource lists, considering the health literacy levels of the participants. Some of these materials consisted of educating on selection of healthy food choices, how to use fruits and vegetables to help manage weight, healthy recipes, physical activity for healthy weight, healthy tips for parents, maintaining healthy weight, and unhealthy effects of
overweight and obesity. A list of county resources including local parks, recreational facilities or activities, was provided and various other teaching opportunities were discussed accordingly.

Learning and understanding was then assessed through verbalization of at least three facts with an opportunity for a question and answer period to reinforce learning. Participants were also provided with handouts in their preferred language on the 5-2-1-0 Let’s Go! model recommendations, in addition to the other educational leaflets generated by established organizations to reinforce learning.

Participants were receptive to learning all components of the educational interventions. While the sample size was not robust (n = 13) and the data is not generalizable, it does support the need to teach Hispanics on the most basic of obesity concepts, to introduce and/or familiarize Hispanics with alternative and healthier choices, to teach how to incorporate cultural food staples in a healthier form, and to provide guidance and support that will result in meaningful lifestyle changes. The findings thus far support the bevy of research that body mass index (BMI) is poorly or not understood by Hispanic families (Sosa, 2012; CDC, 2015b). It is evident that in the Hispanic family unit, understanding what obesity means, how it’s measured, and why it is important, is a fundamental stepping stone in initialing change within this community.

**Participant Progress**

The respondents were followed up via telephone to discuss their progress including successes, barriers, and educational reinforcement as needed. In four of the 13 families, it was reported that participants found it difficult to make lifestyle changes. Six of the 13 families reported making an effort to modify their dietary intake, by providing
their children with healthier choices, cooking with healthier oils, offering more fruits and vegetables, and decreasing their sugary drink and fast food consumption. The remainder three families reported that they were having a hard time moving away from their current lifestyle and admitted their culture was entrenched in their lives and had basically not changed their habits.

The respondents who admitted that they allowed their children to influence purchasing decisions had not changed this practice, since there was a need to reward the children with “treats” for doing well in school or being obedient. This is consistent with Sosa’s (2015) finding that mothers admitted to using food as reinforcement for specific behaviors or sometimes withholding food as a means for discipline.

Participants were then queried on reinforcement of educational interventions, and some of the common areas discussed included what types of oils were healthier, appropriate serving sizes, and examples of fast foods that were healthier choices. All participants felt that the educational information was very helpful and made them more aware of the health-related complications as they reported that they had family members that had been diagnosed with chronic illness such as diabetes.

Parents expressed concern when visiting their primary care provider as they felt they had not received a good understanding of their child’s weight status because the clinician did not spend enough time in the exam room, did not explain the issues or was unable to communicate because of obvious language barriers. This is consistent with the findings in Rodriguez-Ventura et al. (2014) that indicated parents felt they were not given information about the consequences of obesity and improving dietary habits.

In addition to providing educational interventions as noted above, the concept of
obesity, its measurements, and significance was discussed thoroughly in conjunction with
the utilization of the 5-2-1-0 model promoted by the Let’s Go! organization, which
served as a solid foundation to remind families and children how to make healthy choices
and implement changes to their environments. The families were reminded that the
model’s mnemonic, 5-2-1-0, represents four recommendations for healthy eating and
physical activity each day: “eat five or more servings of fruits and vegetables, limit of
two hours or less of recreational screen time, engage in one hour or more of physical
activity,” and “limit sugary drinks; drink more water and low fat milk” (let’s go.org,
2015; Rogers, 2013). In querying participant families about their efforts in curtailing
these guideline areas, some families reported not achieving any of the recommendations
at baseline, while other families were in the process of trying to initiate healthier lifestyle
changes.

Limitations

The main limitation encountered thus far in this study was the small sample size.
While the potential to see a greater number of qualifying participants was possible, there
were a few common themes cited for enrolling a small sample, 1) a decrease in influx of
patients coming to the clinic during the data collection period because of the holidays, 2)
a disinterest in being a study participant, citing such reasons as transportation, inability to
come back to the clinic because of work or school schedule, or simply were in a hurry
and did not want to wait for the Nurse Practitioner, and 3) the total amount of time spent
with each family was greater than anticipated.

Another limitation was the inability to obtain a BMI during the progress check-in.
Contributing to this was the fact that most participants reported an inability to come to
the clinic because of work, school or other commitments. Participants additionally did not own a scale, and even for those that did, validating the instrument would have been challenging because of calibration and accuracy-related issues. Despite this second limitation, the decision to bring the children back at six months is supported by American Academy of Pediatrics (AAP) guidelines on obesity follow-up, and returning at six months turned out to be more amenable for the participants (AAP, 2015; Fitch et al., 2013). Finally, at the end of the educational session, participants were reminded about the six-month follow-up and appointments to be scheduled accordingly.

**Nursing Implications**

The complexity of obesity in Hispanic children requires a deeper, clearer understanding by health providers coupled with examining evidence-based practice to determine the best strategies to reduce prevalence. An analysis of nationwide provider statistics found that Hispanic children were less likely to receive preventive pediatric obesity counseling during office visits versus other ethnicities. Therefore, there is an underlying need to address and act upon parental perception of weight and health status, cultural practices, and address knowledge deficits during the primary care visit and encourage regular, follow-up care. Providers should consider interventions that are instilled with cultural values and principles to improve screening, management, and prevention that target the family unit. The DNP role is well suited to collaborate with the multidisciplinary team to develop culturally competent interventions that target Hispanics. However, it is critical to acknowledge that further research needs to address Hispanic subgroups versus applying a one-size-fits-all approach to these populations.
Conclusion

While there has been an overall decline in childhood obesity incidence, this has not been the case with Hispanic children and adolescents (CDC, 2015a). It is clear from the literature review that Hispanic children and adolescents are more likely to be overweight or obese than their non-Hispanic white, Black or Asian counterparts, which is substantiated in this small, but meaningful pilot study DNP project. What is certain about childhood obesity across the spectrum is that there is a link to developing comorbidities such as congestive heart failure, diabetes, and mobility issues.

This study, while not generalizable due to its small sample size, has strengthened the need to address critical cultural nuances within the Hispanic population to decrease obesity prevalence including parental perception on what obesity is, screening methodology and tools, and the need to develop culturally competent interventions. Though significant barriers were identified, the author of this paper developed and utilized a modified screening tool derived from the knowledge gaps identified in the literature including socioeconomic and lifestyle factors, acculturation, food preference and consumption, and physical activity among other factors in an effort to provide tailored, immediate interventions to address these gaps in knowledge. The research further supported the findings of the American Academy of Pediatrics (AAP), which recommends that all be children be screened for obesity utilizing BMI methodology and that follow-up be conducted at regular, three to six month intervals.

Finally, prevention of obesity and early detection begins with primary care clinicians to ensure children are being screened and parents are obtaining the information and education they need to assist them in initiating and implementing realistic, culturally
competent strategies to curtail obesity prevalence in Hispanic children (Seibert et al., 2014).
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among parent acculturation, child BMI, and child fruit and vegetable consumption 

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APPENDIX A

CDC BMI FOR BOYS 2-20

2 to 20 years: Boys

Body mass index-for-age percentiles

<table>
<thead>
<tr>
<th>Date</th>
<th>Age</th>
<th>Weight</th>
<th>Stature</th>
<th>BMI*</th>
<th>Comments</th>
</tr>
</thead>
</table>

*To Calculate BMI: Weight (kg) = Stature (cm) x Stature (cm) x 10,000
or Weight (lb) = Stature (in) x Stature (in) x 703

Published: May 30, 2000 (modified 10/16/05).

SOURCE: Developed by the National Center for Health Statistics in collaboration with
the National Center for Chronic Disease Prevention and Health Promotion (2000).
http://www.cdc.gov/growthcharts

SAFER • HEALTHIER • PEOPLE*
APPENDIX B

CDC BMI FOR GIRLS 2-20

2 to 20 years: Girls
Body mass index-for-age percentiles

<table>
<thead>
<tr>
<th>Data</th>
<th>Age</th>
<th>Weight</th>
<th>Stature</th>
<th>BMI*</th>
<th>Comments</th>
</tr>
</thead>
</table>

*To Calculate BMI: Weight (kg) / (Stature (cm) x Stature (cm) x 10,000)

Figure 14. CDC Clinical Growth Charts: Children 2 to 20 years, Girls BMI-for-age.
## Staying Healthy Assessment

### 5 – 8 Years

<table>
<thead>
<tr>
<th>Child’s Name (first &amp; last)</th>
<th>Date of Birth</th>
<th>□ Female</th>
<th>Male</th>
<th>Today’s Date</th>
<th>Grade in School?</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person Completing Form</td>
<td>□ Parent</td>
<td>□ Relative</td>
<td>□ Friend</td>
<td>□ Guardian</td>
<td>□ School Attendance</td>
</tr>
<tr>
<td></td>
<td>□ Other (Specify)</td>
<td></td>
<td></td>
<td></td>
<td>□ Regular? □ Yes □ No</td>
</tr>
</tbody>
</table>

Please answer all the questions on this form as best you can. Circle “Skip” if you do not know an answer or do not wish to answer. Be sure to talk to the doctor if you have questions about anything on this form. Your answers will be protected as part of your medical record.

### Nutrition

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your child drink or eat 3 servings of calcium-rich foods daily, such as milk, cheese, yogurt, soy milk, or tofu?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>2. Does your child eat fruits and vegetables at least two times per day?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>3. Does your child eat high fat foods, such as fried foods, chips, ice cream, or pizza more than once per week?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>4. Does your child drink more than one small cup (4 - 6 oz.) of juice per day?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>5. Does your child drink soda, juice drinks, sports drinks, energy drinks, or other sweetened drinks more than once per week?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>6. Does your child exercise or play sports most days of the week?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
</tbody>
</table>

### Physical Activity

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>7. Are you concerned about your child’s weight?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>8. Does your child watch TV or play video games less than 2 hours per day?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
</tbody>
</table>

### Safety

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>9. Does your home have a working smoke detector?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>10. Have you turned your water temperature down to low-warm (less than 120 degrees)?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>11. Does your home have the phone number of the Poison Control Center (800-222-1222) posted by your phone?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>12. Do you always place your child in a booster seat in the back seat (or use a seat belt if your child is over 4’9”)?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>13. Does your child spend time near a swimming pool, river, or lake?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>14. Does your child spend time in a home where a gun is kept?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
</tbody>
</table>
15 Does your child spend time with anyone who carries a gun, knife, or other weapon? No Yes Skip

16 Does your child always wear a helmet when riding a bike, skateboard, or scooter? Yes No Skip

17 Has your child ever witnessed or been victim of abuse or violence? No Yes Skip

18 Has your child been hit or hit someone in the past year? No Yes Skip

19 Has your child ever been bullied or felt unsafe at school or in your neighborhood (or been cyber-bullied)? No Yes Skip

20 Does your child brush and floss her/his teeth daily? Yes No Skip

21 Does your child often seem sad or depressed? No Yes Skip

22 Does your child spend time with anyone who smokes? No Yes Skip

23 Do you have any other questions or concerns about your child’s health or behavior? No Yes Skip

If yes, please describe:

<table>
<thead>
<tr>
<th>Clinic Use Only</th>
<th>Counselled</th>
<th>Referred</th>
<th>Anticipatory Guidance</th>
<th>Follow-up Ordered</th>
<th>Comments:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Nutrition</td>
<td></td>
<td></td>
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</tr>
<tr>
<td>Physical Activity</td>
<td></td>
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<tr>
<td>Safety</td>
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<tr>
<td>Dental Health</td>
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</tr>
<tr>
<td>Tobacco Exposure</td>
<td></td>
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</tr>
</tbody>
</table>

Patient Declined the SHA

PCP’s Signature
Print Name:
Date:

SHA ANNUAL REVIEW

PCP’s Signature
Print Name:
Date:

PCP’s Signature
Print Name:
Date:

PCP’s Signature
Print Name:
Date:
# Staying Healthy Assessment

**9 – 11 Years**

<table>
<thead>
<tr>
<th>Child's Name (first &amp; last)</th>
<th>Date of Birth</th>
<th>□ Female</th>
<th>□ Male</th>
<th>Today's Date</th>
<th>Grade in School:</th>
</tr>
</thead>
<tbody>
<tr>
<td>Person Completing Form</td>
<td>□ Parent</td>
<td>□ Relative</td>
<td>□ Friend</td>
<td>□ Guardian</td>
<td>□ Other (Specify)</td>
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<tr>
<td></td>
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<td>School Attendance:</td>
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<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>□ Regular?</td>
</tr>
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</table>

Please answer all the questions on this form as best you can. Circle "Skip" if you do not know an answer or do not wish to answer. Be sure to talk to the doctor if you have questions about anything on this form. Your answers will be protected as part of your medical record.

**Clinic Use Only:**

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Does your child drink or eat 3 servings of calcium-rich foods daily, such as milk, cheese, yogurt, soy milk, or tofu?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>2. Does your child eat fruits and vegetables at least two times per day?</td>
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<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>3. Does your child eat high fat foods, such as fried foods, chips, ice cream, or pizza more than once per week?</td>
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<td>Skip</td>
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<tr>
<td>4. Does your child drink more than one cup (8 oz.) of juice per day?</td>
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<td>5. Does your child drink soda, juice drinks, sports drinks, energy drinks, or other sweetened drinks more than once per week?</td>
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<td>Skip</td>
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<tr>
<td>6. Does your child exercise or play sports most days of the week?</td>
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<td>No</td>
<td>Skip</td>
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<td>7. Are you concerned about your child’s weight?</td>
<td>No</td>
<td>Yes</td>
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<td>8. Does your child watch TV or play video games less than 2 hours per day?</td>
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<td>9. Does your home have a working smoke detector?</td>
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<td>10. Does your home have the phone number of the Poison Control Center (800-222-1222) posted by your phone?</td>
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<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>11. Do your child always use a seat belt in the back seat (or use a booster seat if under 4'9&quot;)?</td>
<td>Yes</td>
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<td>12. Does your child spend time near a swimming pool, river, or lake?</td>
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<td>14. Does your child spend time with anyone who carries a gun, knife, or other weapon?</td>
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<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>15. Does your child always wear a helmet when riding a bike, skateboard, or scooter?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td></td>
<td>Question</td>
<td>Yes</td>
<td>No</td>
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<tr>
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</tr>
<tr>
<td>16</td>
<td>Has your child ever witnessed or been a victim of abuse or violence?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>17</td>
<td>Has your child been hit or has your child hit someone in the past year?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>18</td>
<td>Has your child ever been bullied, felt unsafe at school or in your neighborhood (or been cyber-bullied)?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>19</td>
<td>Does your child brush and floss her/his teeth daily?</td>
<td>Yes</td>
<td></td>
</tr>
<tr>
<td>20</td>
<td>Does your child often seem sad or depressed?</td>
<td></td>
<td></td>
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<tr>
<td>21</td>
<td>Does your child spend time with anyone who smokes?</td>
<td></td>
<td></td>
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<tr>
<td>22</td>
<td>Has your child ever smoked cigarettes or chewed tobacco?</td>
<td></td>
<td></td>
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<tr>
<td>23</td>
<td>Are you concerned your child may be using drugs or sniffing substances, such as glue, to get high?</td>
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<td></td>
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<tr>
<td>24</td>
<td>Are you concerned that your child may be drinking alcohol, such as beer, wine, wine coolers, or liquor?</td>
<td></td>
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<tr>
<td>25</td>
<td>Does your child have friends or family members who have a problem with drugs or alcohol?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>26</td>
<td>Has your child started dating or “going out” with boyfriends or girlfriends?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>27</td>
<td>Do you think your child might be sexually active?</td>
<td></td>
<td></td>
</tr>
<tr>
<td>28</td>
<td>Do you have any other questions or concerns about your child’s health or behavior?</td>
<td></td>
<td></td>
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</tbody>
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If yes, please describe:

<table>
<thead>
<tr>
<th>Clinic Use Only</th>
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<tr>
<td>Alcohol, Tobacco, Drug Use</td>
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<tr>
<td>Sexual Issues</td>
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</table>

☐ Patient Declined the SHA

PCP's Signature: ___________________________ Print Name: ___________________________ Date: ________________

SHA ANNUAL REVIEW

PCP's Signature: ___________________________ Print Name: ___________________________ Date: ________________

PCP's Signature: ___________________________ Print Name: ___________________________ Date: ________________
## Staying Healthy Assessment
### 12 – 17 Years

<table>
<thead>
<tr>
<th>Question</th>
<th>Yes</th>
<th>No</th>
<th>Skip</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Do you drink or eat 3 servings of calcium-rich foods daily, such as milk, cheese, yogurt, soy milk, or tofu?</td>
<td>Yes</td>
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<td>No</td>
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<td>Skip</td>
</tr>
<tr>
<td>4. Do you drink more than 12 oz. (1 soda can) per day of juice drink, sports drink, energy drink, or sweetened coffee drink?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>5. Do you exercise or play sports most days of the week?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
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<tr>
<td>6. Are you concerned about your weight?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>7. Do you watch TV or play video games less than 2 hours per day?</td>
<td>Yes</td>
<td>No</td>
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<tr>
<td>8. Does your home have a working smoke detector?</td>
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<td>9. Does your home have the phone number of the Poison Control Center (800-222-1222) posted by your phone?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>10. Do you always wear a seatbelt when riding in a car?</td>
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<td>No</td>
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</tr>
<tr>
<td>11. Do you spend time in a home where a gun is kept?</td>
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<td>12. Do you spend time with anyone who carries a gun, knife, or other weapon?</td>
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<td>13. Do you always wear a helmet when riding a bike, skateboard, or scooter?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>14. Have you ever witnessed abuse or violence?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>15. Have you been hit, slapped, kicked, or physically hurt by someone (or have you hurt someone) in the past year?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>16. Have you ever been bullied or felt unsafe at school or in your neighborhood (or been cyber-bullied)?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>17. Do you brush and floss your teeth daily?</td>
<td>Yes</td>
<td>No</td>
<td>Skip</td>
</tr>
<tr>
<td>18. Do you often feel sad, down, or hopeless?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>19. Do you spend time with anyone who smokes?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
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<tr>
<td>20. Do you smoke cigarettes or chew tobacco?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>21. Do you use or sniff any substance to get high, such as marijuana, cocaine, crack, Methamphetamine (meth), ecstasy, etc.?</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>Question</td>
<td>No</td>
<td>Yes</td>
<td>Skip</td>
</tr>
<tr>
<td>-------------------------------------------------------------------------</td>
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</tr>
<tr>
<td>Do you use medicines not prescribed for you?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you drink alcohol once a week or more?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>If you drink alcohol, do you drink enough to get drunk or pass out?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you have friends or family members who have a problem with drugs or alcohol?</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Do you drive a car after drinking, or ride in a car driven by someone who has been drinking or using drugs?</td>
<td></td>
<td></td>
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</tr>
</tbody>
</table>

**Sexual Issues**

- Have you ever been forced or pressured to have sex?
- Do you think you or your partner could have a sexually transmitted infection (STI), such as Chlamydia, Gonorrhea, genital warts, etc.?
- Have you or your partner(s) had sex with other people in the past year?
- Have you or your partner(s) had sex without using birth control in the past year?
- The last time you had sex, did you use birth control?
- Have you or your partner(s) had sex without a condom in the past year?
- Did you have any questions about your sexual orientation (who you are attracted to) or gender identity (how you feel as a boy, girl, or other gender)?
- Do you have any other questions or concerns about your health?

**Clinic Use Only**

- Nutrition
- Physical activity
- Safety
- Dental Health
- Mental Health
- Alcohol, Tobacco, Drug Use
- Sexual Issues

**Clinic Use Only**

- Nutrition
- Physical activity
- Safety
- Dental Health
- Mental Health
- Alcohol, Tobacco, Drug Use
- Sexual Issues

**Comments:**

- Patient Declined the SHA

**SHA ANNUAL REVIEW**

- PCP’s Signature: Print Name: Date:
APPENDIX D

We are interested in the health and well-being of all our patients. Please take a moment to answer the following questions.

Patient Name: __________________________ Age: ____ Date: ____________

1. How many servings of fruits or vegetables do you eat a day?  
   *(One serving is most easily identified by the size of the palm of your hand.)*

2. How many times a week do you eat dinner at the table together with your family?

3. How many times a week do you eat breakfast?

4. How many times a week do you eat takeout or fast food?

5. How many hours a day do you watch TV/movies or sit and play video/computer games?

6. Do you have a TV in the room where you sleep?

7. Do you have a computer in the room where you sleep?

8. How much time a day do you spend in active play (faster breathing/heart rate or sweating)?

9. How many 8-ounce servings of the following do you drink a day?  
   Soda or punch____ 100% Juice_____ Whole Milk_______  
   Water____ Nonfat (skim)____, low-fat (1%)____, or reduced-fat (2%) milk_____

10. **Based on your answers, is there ONE thing you would be interested in changing now? Please check one box:**
   Eat more fruits and vegetables.
   Take the TV out of the bedroom.
   Play outside more often.
   Switch to nonfat (skim) or low-fat (1%) milk.
   Spend less time watching TV/movies and playing video/computer games.
   Eat less fast food/takeout.
   Drink less soda, juice, or punch.
   Drink more water.

*Please give the completed form to your clinician. Thank you.*
APPENDIX E

5210 HABITOS SALUDABLES QUESTIONARIO (EDAD 2-9, 10–18)

Nombre del patienté: _______________________ Edad: ____ Fecha:__________

Estamos interesados en la salud y bienestar de todos nuestros patientés. Por favor tome un momento para contestar las siguientes preguntas.

1. Cuantas porciones de frutas y vegetales comes al dia?  
   *How many servings of fruits or vegetables do you eat a day?*

2. Cuantas veces por semana cenas en la mesa con tu familia?  
   *How many times a week do you eat dinner at the table together with your family?*

3. Cuantas veces por semana desayunas?  
   *How many times a week do you eat breakfast?*

4. Cuantas veces por semana comes comida rapida o restaurantes?  
   *How many times a week do you eat takeout or fast food?*

5. Cuantas horas por dia pasas mirando la television, los videos, o jugando juegos en la computadora?  
   *How many hours a day do you watch TV/movies or sit and play video/computer games?*

6. Tienes television en la habitacion donde duermes? Si □ No □  
   *Do you have a TV in the room where you sleep?*

7. Tienes computadora en la habitacion donde duermes? Si □ No □  
   *Do you have a computer in the room where you sleep?*

8. Cuanto tiempo por dia pasas haciendo algun tipo de actividad fisica moderada?  
   *How much time a day do you spend in active play?*

9. Cuantas porciones de 8-onzas bebes de lo siguiente al dia?  
   *How many 8-ounce servings of the following do you drink a day?*
   100% Jugo *(juice)* _______ Bebidas de fruta o para deportes *(fruit drinks or sports drinks)* _______  
   Soda o ponche *(soda or punch)* _______ Agua *(water)* _______
   Lche entera *(whole milk)* _______ Lche reducida en grasa o descremada *(nonfat or reduced fat milk)* _______

10. Basada en sus respuestas, hay ALGUNA cosa que quisieras cambiar ahora? Por favor marque una.  
    *Based on your answers, is there ONE thing you would like to change now? Please check one box:*
    Comer mas frutas y verduras *(eat more fruits & vegetables).*
    Sacar la television de la habitacion *(take the TV out of the bedroom)* Jugar afuera mas seguido *(play outside more often).*
    Cambiar a leche descremada/reducida en grasa *(switch to skim/low fat milk).*
    Menos tiempo en la television/video juegos *(less time watching TV/video games).*
    Comer menos comida rapida/restaurantes *(eat less fast food/takeout).*
    Beber menos soda, jugo o ponche *(drink less soda, juice, or punch).*
    Beber mas agua *(drink more water).*

*Por favor de entregar este formulario a su medico.*
APPENDIX F

ADAPTED 5210 HEALTHY HABITS QUESTIONNAIRE (AGES 2–18)

We are interested in the health and well-being of all our patients. Please take a moment to answer the following questions.

Name: _______________________________ Age: ___________ Date: ______

1. Do you know what Body Mass Index (BMI) is?
2. Do you believe your child is overweight?
3. What is the highest grade level you attained?
4. How long have you been present in the United States?
5. Who makes the food purchasing decisions in your household?
6. How many servings of fruits or vegetables does your child eat a day? (One serving is most easily identified by the size of the palm of your hand.)
7. Does your family eat: fried, greasy fatty foods, fast-food, junk food (chips, sweets, sugar snacks)?
8. How many times a week do you and your family eat these foods?
9. How many hours a day do you or your child watch TV/movies or sit and play video/computer games?
10. Do you have access to recreational areas? ___ Supermarkets? ___
11. How much time a day do you or your child spend in physical activity (faster breathing/heart rate or sweating)?
12. How many 8-ounce servings of the following do you drink a day?
   Water____ Fruit drinks/sports drinks______ 100% juice/punch______ Soda____ Milk______ 1-2% Milk or non-fat Milk_______

Based on your answers, is there ONE thing you would be interested in changing now? Please check one box.

- Eat more fruits and vegetables.
- Play outside more often, spend less time watching TV/computer/Video games?
- Eating healthier, making healthier choices
- Eat less fast food/takeout.
- Drink less soda, juice, or punch.
- Drink more water.

Please give the completed form to your clinician. Thank you.
APPENDIX G

ADAPTED 5210 HABITOS SALUDABLES QUESTIONARIO (EDAD 2 – 18)

Estamos interesados en la salud y bienestar de todos nuestros pacientes. Por favor tome un momento para contestar las siguientes preguntas.

Nombre____________________________ Edad: ____ Fecha: __________

1. Entiende lo que significa indice de masa corporal?
2. Usted piensa que su hijo o hija esta pasado de peso?
3. Que nivel de escuela completo?
4. Cuanto tiempo tiene viviendo en Los Estados Unidos?
5. Quien toma las decisions de comprar los comestibles en su casa?
6. Usted o su familia consume comidas fritas, grasosas, comida rapida, o comida chatarra?
7. Que tan seguido consumen estas comidas?
8. Cuantas porciones de frutas / vegetales comen al dia?
9. Tienen acceso a parques________ Mercado_______
10. Cuantas horas por dia pasan mirando la television/jugando juegos en la computadora?
11. Cuanto tiempo por dia pasas haciendo algun tipo de actividad fisica \ moderada?
12. Cuantas porciones de 8-onzas bebes de lo siguiente al dia?
   100% Jugo _____ Bebidas de fruta o para deportes _______ Soda o ponche _______ Agua ____ Leche entera _______ Leche reducida en grasa o descremada _______

Basada en tus respuestas, hay ALGUNA cosa que quisiera cambiar ahora?
Por favor marque una.
☐ Comer mas frutas y verduras
☐ Jugar afuera mas seguido o pasar menos tiempo en la television/video juegos
☐ Comer mas saludable, hacer selecciones de comidas mas saludables
☐ Consumir menos comida rapida/chatarra
☐ Beber menos soda, jugo o ponche
☐ Beber mas agua

Por favor de entregar este formulario a su medico.