

Nutrition Intake and Child Feeding Styles Among Latino Farmworkers in Southern Idaho to Childhood Obesity

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Authorization to Submit Thesis

This thesis of Nallely G. Vega, submitted for the degree of Master of Science with a Major in Family and Consumer Sciences and titled "Nutrition Intake and Child Feeding Styles Among Latino Farmworkers in Southern Idaho to Childhood Obesity," has been reviewed in final form. Permission, as indicated by the signatures and dates below, is now granted to submit final copies to the College of Graduate Studies for approval.

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Abstract

Childhood obesity is a health concern in the United States (US); obesity among children of Migrant and Seasonal Farm Working (MSFW) families exceeds that of other US Latino children. Childhood obesity is impacted by several factors; however, a crucial factor is parenting influences. Child nutrition intake and child-feeding styles have been associated with children's weight status. As a result, knowledge about family's dietary quality is needed to understand the parental role in the origins and prevention of child obesity in MSFW families. A secondary qualitative study was conducted to investigate the MSFW families' perspectives on their feeding styles, nutrition intake, and their children's Body Mass Index (BMI). This study attempted to characterize the association of feeding styles to dietary intake and measure overweight and obesity status in MSFW children.

A convenience sample was used from the existing data (N=384) from the Community Council of Idaho, Migrant and Seasonal Head Start (MSHS) Programs in Idaho. The data were obtained from families and children, ages 3-5 years of age attending MSHS centers. The method of data collection that is used for this project included anthropometric measurements to conduct children's height and weight and the nutrition history questionnaire answered by families. The results were analyzed using SPSS software by coding the responses to the nutrition history questionnaire numerically. The results indicated that most of the families in this study reported similar child-feeding styles and perspectives on child nutrition intake across different child weight status ranging from underweight to obese.

A similar pattern was found in parental reported child-feeding styles and parents' perspective on child nutrition intake to children's BMI. This study adds to the literature because it was one of few studies using the parental self-report method to gain understanding on MSFW child feeding styles and children's food intake. Understanding how feeding styles influence children's eating behaviors can benefit prevention programs, specifically those that aim to prevent childhood obesity and to help parents understand effective feeding styles.

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Dedication

I would like to dedicate this to my son, Eli Vega who I have had to sacrifice time from in order to focus on this journey, thank you son for understanding that mom had to do homework and for allowing me to do this. Thank you for waking me up when I fell asleep typing by saying, “Mom you have to finish your homework, you can do five more minutes.” Eli, I did this for you, I pushed myself so that one day you would push yourself to achieve and fulfill your dreams. To my husband, Jorge Vega who has been my rock, has stood by my side as my strongest supporter and has continuously encouraged me to pursue my career goals. Thank you for taking on the financial responsibilities of the household so that I could focus on my thesis. To my parents, Jose and Guadalupe Prado thank you for all of your sacrifices and hard work you have endured in order to provide me and my siblings with an opportunity for a better future and an education. Mom and dad thank you for always pushing me to do better and bigger things I could not have done this without you. To my siblings, Stephanie and Daniel Prado, it has been hard being the oldest sibling I have pressured myself into setting good examples for you to follow. I have also tried to break down barriers and promote higher education for you to pursue and fulfill your dreams. Thank you for believing in me and for sharing this journey with me. I love you all so much thank you for always pushing me and for never allowing me to give up even when I wanted to. When I could no longer see the end of the road you all kept me going. Thank you again for your unconditional motivation and support. Gracias familia, lo logramos!

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Chapter I: Introduction

Obesity is not only a health concern, but an important risk factor for many chronic diseases (World Health Organization, 2013). Obesity is excessive fat accumulation that may impair health and is characterized by an excess of body fat or adiposity (Anju & Rajni, 2013; Brown, Halvorson, Hohen, Lazorick, & Skelton, 2015; Contento, 2016). Central (visceral or abdominal) fat deposition is associated with a higher risk of cardiovascular disease and diabetes mellitus, in comparison to gluteal or subcutaneous fat (Anju & Rajni, 2013). Childhood obesity is of particular concern because children who are overweight or obese are more likely to be obese in adulthood (World Health Organization, 2013).

Among Latino children ages 2-5 years, 14.4% were overweight and 8.4% were obese in 2011-2012 (Arauz Boudreau, Kurowski, Gonzalez, Dimond, & Oreskovic, 2013). The majority of children have simple obesity because of caloric excess causing weight gain (Anju & Rajni, 2013). Obesity is viewed as a complex disorder involving biology, physical environments, societal structures, and cultural determinants (Arauz Boudreau, et al., 2013). In particular parental feeding styles and responses to children's appetitive traits may have profound consequences for the development of children's food preferences, eating habits, and body weights (Ek, et al., 2016). On the other hand, obesity is also one of the most prevalent childhood chronic health conditions (Arauz Boudreau, et al., 2013).

Children are at a critical stage of growth and development, a good quality diet, especially for children under 5 years of age, improves growth, mental development, physical health, and school performance, and is necessary to ensure a healthy and productive future (Contento, et al., 2016). Unfortunately, many children living in the United States (US) consume diets that do not meet national dietary recommendations (Evans, et al., 2009). Data from recent National Health and Nutrition Survey (NHANES) show diets of children as young as 2 years of age include too much saturated fat, sodium, and calories from nutrient-poor and calorie-dense food (Evans, et al., 2009). As a result, US children's current dietary patterns may be one contributing factor to the rising prevalence of childhood obesity a condition that now affects between 20 and 24% of preschool aged children in the US. Furthermore, "Obesity among children of, Migrant and Seasonal Farm Working (MSFW) families exceeds that of other US Latino Children, knowledge of their dietary quality is

needed to understand the origins and prevention of this obesity” (Quandt, et al., 2016, pg 505).

Dietary patterns of children are greatly influenced by the foods that are made available to them by their parents (Evans, et al., 2009). In fact, parents can play a key role in early identification and intervention efforts to address childhood obesity by shaping their children’s eating behaviors and encouraging their children to be involved in physical activity (Rosado, Bennett Johnson, McGinnity, & Cuevas, 2013). Given the serious consequences of unhealthful dietary patterns among children, there is a need for a greater understanding of the influences on parental feeding styles. Quandt et al., 2016 mentioned that children enrolled in Migrant and Seasonal Head Start (MSHS) programs are at high risks of health problems. Children whose parents are part of the Latino Migrant and Seasonal labor are at risk for obesity; their parents’ occupations foster a lifestyle that often places them at risk for suboptimal health, including obesity (Rosado, Bennett Johnson, McGinnity, & Cuevas, 2013).

Statement of Purpose

The purpose of this study is to analyze existing data on Latino MSFW parents of preschool children in MSHS Centers responses to nutrition history questionnaire, and child Body Mass Index (BMI) calculations. This study will examine (1) What do parents’ perspectives of child nutrition intake look like in MSHS families, and (2) What are the child-feeding styles across the different weight categories.

Research Question to Be Examined:

Based on the nutrition history questionnaire answered by MSFW families, the following two research questions will be answered: (1) What do parents’ perspectives of child nutrition intake look like in MSHS families, and (2) What are the child-feeding styles across the different weight categories?

Definition of Terms

Authoritarian Child-Feeding Style: adult-controlled feeding styles-parents encourage eating with rule-based demands regardless of child preference (Fletcher et al., 1997).

Authoritative Child-Feeding Style: characterized by caring parents who convey concrete, behavioral expectations and consistently enforce rules that encourage healthful eating but do not force consumption, parent decides what and when food is offered and the child decides how much or whether to eat. Parents encourage eating using supportive and nondirective behaviors (Fletcher et al., 1997).

Child-Feeding Styles: may be viewed as a sub-category of parenting styles that are specific to mealtimes, therefore the same dimensions of demandingness and responsiveness are applied in the feeding context (Shloim, Edelson, Martin, & Hetherington, 2015) and how parents interact with their children in feeding situations (Ip, et al., 2017; Shloim, Edelson, Martin, & Hetherington, 2015).

Immigrate: a person who comes to another county to live permanently (emigrate/immigrat/migrate, n.d.).

Latino: a person of Latin American origin or descent (Latino, n.d.).

Migrant and Seasonal Head Start (MSHS): created to respond to the needs of migrant farm-working families. To provide childcare services to farmworkers to ensure children are not in the fields. Provides services focused on the “whole child” like school readiness, health and nutrition (Migrant and Seasonal Head Start, n.d.).

Migrant Farmworker: a person who moves and establishes temporary residence to do farm work (Quandt, Grzywacz, Trejo, & Arcury, 2014).

Child Nutrition Intake: specific goal-directed behaviors used by parents to directly influence their children’s eating (Shloim, Edelson, Martin, & Hetherington, 2015).

Parenting Styles: a general behavioral construct which sets the emotinal context within which parents and children interact that can influence child developmental outcomes (Shloim, Edelson, Martin, & Hetherington, 2015; Contento, et al., 2016).

Permissive/Indulgent Child-Feeding Style: child-controlled feeding styles-parents permit child freedom to eat when they wish and choose what foods they prefer (Fletcher et al., 1997).

Seasonal Farmworker: a person who resides in the same area year-round, employed part of the year as farmworkers (Quandt, Grzywacz, Trejo, & Arcury, 2014).

Uninvolved Child-Feeding Style: associated with both low demandingness and low responsiveness. Parents make few demands on their child to eat but when demands are made this is unsupportive (i.e. disorganized or few meal routines) (Fletcher et al., 1997).

Limitations

The limitations for this study include the participant sample and data collection process. The study will use a convenience sample of Latino MSHS center parents and their children ages 3-5 years. The sample is not representative of all Latino families in the US. The limitation of the convenience sampling restricts the comparison of this group in replication studies. Children in this study were all attending a MSHS Programs through the Community Council of Idaho located in Idaho. Data collection limitations include use of multiple trained MSHS center staff reporting accuracy.

Summary

In the US obesity and overweight are significant problems for children, particularly for Hispanic/Latino children (Quandt, Grzywacz, Trejo, & Arcury, 2014); childhood obesity has placed them at risk for its related health consequences (Quandt et al., 2014). Parental child-feeding styles may impact children's weight; unfortunately, limited attention has been given to childhood obesity among Latino MSHS communities. Given the serious consequences of unhealthful dietary patterns among children, there is a need for a greater understanding of the influences on parental feeding styles. Therefore, the purpose of this study is to analyze existing data on Latino MSFW parents of preschool children in MSHS Centers responses to nutrition history questionnaire, and child Body Mass Index (BMI) calculations. This study will examine (1) What do parents' perspectives of child nutrition intake look like in MSHS families, and (2) What are the child-feeding styles across the different weight categories. The addition of this material may help provide information for daycare or preschool providers, who work closely with MSHS parents. This information can help these caregivers educate and guide parents in regard to the child-feeding styles they use with their children to encourage healthy eating behaviors. The material will also provide

information to create trainings over what child-feeding styles will be recommended in regard to promoting child healthy development and growth.

Chapter II: Review of the Literature

Introduction

Obesity is the most significant health risk factor for many chronic diseases (World Health Organization, 2013). It is excessive body fat accumulation or adiposity that may impair health (Anju & Rajni, 2013; Brown, Halvorson, Hohen, Lazorick, & Skelton, 2015; Contento, 2016). For example, central (visceral or abdominal) fat deposition is associated with a higher risk of cardiovascular disease and diabetes mellitus, in comparison to gluteal or subcutaneous fat (Anju & Rajni, 2013).

In the United States, obesity and overweight are significant problems for children, particularly for Hispanic/Latino population (Quandt, Grzywacz, Trejo, & Arcury, 2014). Obesity can adversely affect nearly every organ system and often cause serious consequences, such as hypertension, dyslipidemia, insulin resistance/diabetes, fatty liver disease, and psychosocial complications (Han, Lawlor, & Kimm, 2010). Childhood obesity is more likely to lead to adult obesity and to the tracking of poor health throughout adulthood (Yanovski, 2015).

There are several factors influencing childhood obesity, one crucial factor is parenting influences. Parental feeding styles and responses to children's appetitive traits may have profound consequences for the development of children's food preferences, eating habits, and body weights (Ek et al., 2016). Parenting feeding styles (i.e., authoritative, authoritarian, indulgent, and uninvolved) have been associated with children's weight status in low-income minority parents (Ek, Lindberg, Nyman, Marcus, Nowicka, 2016). There is a need for a greater understanding of the influences on parental feeding styles on children's eating habits. Through the literature review, this study will examine MSHS parents' child-feeding styles, their child's nutrition intake, and child's weight status. Identifying this information is important for the development of programs, trainings, and interventions to educate MSHS children, parents and MSHS staff about the importance of healthy eating on children's wellbeing. This literature begins by presenting how children's diets are linked to childhood obesity with emphasis on parental feeding styles. Since racial, ethnic, and socioeconomic disparities in the prevalence of obesity are well documented (Arauz et al., 2013); Latino

migrant and seasonal farm worker population is the focus in this chapter and a summary of how this population encounters its own unique challenges.

Children's Diets in the United States

Young children are at a critical stage of growth and development especially children under five years of age. A good quality diet can improve growth, mental development, physical health, and school performance, as necessary to ensure a healthy and productive future (Contento, et al., 2016). Many children living in the US consume diets that do not meet national dietary recommendations; data from recent National Health and Nutrition Survey (NHANES) show diets of children as young as two years of age include too much saturated fat, sodium, and calories from nutrient-poor and calorie-dense food (Evans, et al., 2009). The USDA Center for Nutrition Policy and Promotion (CNPP) developed a food guidance system called "MyPlate" that provides a positive and visual message of how to select foods for each meal to promote healthy eating behaviors. On the plate, fruits and vegetables should make up half of the diet, with more vegetables than fruits. The other half should include grains and protein, such as meat, poultry, and fish with more grains than proteins (Holli & Beto, 2018). Dairy is shown on the side.

In fact, cultural, social, economic, environmental, and other factors are involved in food selection in addition to individual choice, patterns, and personal taste (Holli & Beto, 2018). Food is essential to life, but the dietary patterns and choices people make can directly affect health (Holli & Beto, 2018). An individual's risk for many chronic diseases including heart disease, stroke, diabetes, and some cancers are often increased depending on food and lifestyle choices made by individuals. In 2012, NHANES estimated that percent of obese children was about 17.3% in the US (Skinner & Skelton, 2014) however, obesity among children of MSHS exceeds that of other US Latino Children; therefore, knowledge of their dietary status is needed to understand in order to prevent obesity (Quandt, et al., 2016).

Childhood Obesity

It is estimated that the number of children under five years of age who are overweight is above 40 million in 2011 (World Health Organization, 2013). Obesity among children is associated with a number of health conditions including high cholesterol, high blood

pressure, diabetes, bone and joint problems and sleep apnea (CDC, 2015). It is also a strong predictor of adult obesity and there are health consequences related to obesity in the adult years (Choudhary, Donnelly, Racadio, & Strife, 2007). Obesity impacts all the major organ systems of the body and appears to be a major contributor to many preventable causes of morbidity (Yanovski, 2015; Raj, 2012). The risk factors of childhood obesity range from genetics, eating and physical activity behaviors, environmental factors (e.g., food insecurity), social and individual psychology, and metabolism (Childhood Obesity Facts, 2017). Pulmonary disorders, including obstructive sleep apnea and reactive airway disease are seen more frequently among obese children (Han, Lawlor, & Kimm, 2010).

BMI is the most widely used parameter to assess obesity (Anju & Rajni, 2013). BMI provides a guideline for assessing underweight and overweight in children and adults; (it is predictive of body fat for children over 2 years of age (Brown, Isaacs, Krinke, Lechtenberg, Murtaugh, Sharbaugh, 2011, 270). BMI changes with age in children and therefore absolute cutoffs are not appropriate for them (Anju & Rajni, 2013). For children 2 years of age or older, a BMI 85th ≥ percentile or greater but less than 95th percentile indicates overweight, and a BMI in the 95th percentile or greater indicates obesity (Brown, et al., 2011, p. 274). Waist circumference is generally used as a measurement of central obesity (Anju & Rajni, 2013). The reference standards most commonly used in the United States for evaluating children's BMI are the 2000 Centers for Disease Control and Prevention growth charts (CDC, 2000). The charts provide age-and sex-specific standards for ages that were constructed using a modified LMS (lambda, mu, and sigma) estimation procedure from data obtained in nationally representative U.S. surveys included because of the marked increases in BMI that were seen in subsequent U.S. surveys (Yanovski, 2015).

“According to National Health and Nutrition Examination Survey (2007-2008), among children who were age 2 through 5 years, the prevalence of body mass index (BMI) at or more than the 95th percentile for age and sex was 9.1% among non-Hispanic white children, 11.4% among non-Hispanic black children, and 13.7% among Hispanic children” (Stang & Loth, 2011, p. 1301; Quandt, Grzywacz, Trejo, & Arcury, 2014). In order to understand childhood obesity, there is a need to understand what shapes and informs children's eating habits. For example, socioeconomic status is one important factor to

consider in relation to parenting and childhood obesity because the inability to buy nutrient dense foods and meals for children can be affected by the families' socioeconomic status. The high level of obesity in Latino children, especially in farmworker families, may be partly attributed to feeding styles of parents. Feeding styles used in Latino Farm-working families have not been well characterized.

Childhood Obesity in the Latino Community

Children from ethnic minority populations in the US are of particular concern when researching obesity (Stang & Loth, 2011). "Environments with lower than average neighborhood availability of healthful foods and higher than average availability of fast food restaurants, along with exposure to ethnically targeted food marketing may contribute to reliance on high calorie foods and beverages, and these foods may be socially and culturally valued" (Kumanyika, 2008, p. 61). Latino children have a higher risk of acquiring obesity-related conditions such as type 2 diabetes compared to their non-Latino counterparts (Evens, Chow, Jennings, Dave, Scoblick, Sterba, Loyo, 2011). When examining feeding process related to weight status for very young children, it is important to focus on the role of parents in the feeding process (Stang & Loth, 2011). Parents are able to modify or control behaviors that contribute to childhood obesity such as the child's immediate environment, both within and outside the home. Understanding how Latino parents approach feeding their children is a primary step in this process to better support parents on healthy feeding practices (Martinez, Rhee, Blanco, & Boutelle, 2014).

Parenting Influence on Childhood Obesity

Parents are of particular importance in the childhood obesity epidemic by influencing the food children eat, and by parents' feeding styles and practices. The parents role could influence child weight status by many factors, including what they serve at meals, the snacks parents provide, the accessibility and availability of various foods in the home, the amount of meals eaten outside the home, and portion sizes control (Vaughn, Tabak, Bryant, & Ward, 2013). Negative parent modeling (e.g., not eating nutrient dense foods such as fruits, vegetables, and whole grains) and poor diet may impede a child's physical development and health (Alaimo, Olson, Frongillo, & Briefel, 2001; Bell & Tepper, 2006; Dave, Evans, Pfeiffer, Watkins, & Saunders, 2010; Martin, Lee, Couch, Morrison, & Woo, 2011; Nord,

Andrews, & Carlson, 2005; Singh, Siahpush, Hiatt, & Timsina, 2011; Swinburn, Egger, & Raza, 1999; Turnbull & MatisooSmith, 2002; Wang & Zhang, 2006; Worobey, Ostapkovich, Yudin, & Worobey, 2010). In order to make parents more aware of what they feed their children it is important to provide culturally appropriate nutrition education and explain why food groups are recommended as well as portion sizes, food access and availability (how to shop for food that is available in the area), explaining how to cook various foods. Looking at parental child feeding styles, and nutritional intake with the parent is important as they may not realize how certain behaviors affect their child's health in the long run.

Parenting Styles. Parenting style is a general behavioral construct which sets the emotional context within which parents and children interact that can influence child developmental outcomes (Shloim, Edelson, Martin, & Hetherington, 2015; Contento, et al., 2016). The interaction between parents and their children is crucial; it influences children's growth and activity pattern (Shloim, Edelson, Martin, & Hetherington, 2015). These interactions often vary on at least two dimensions: responsiveness to the child (warmth and nurturance) versus control/demandingness (how much control parents exercise, expectations and demands) (Contento, et al., 2016; Shloim, Edelson, Martin, & Hetherington, 2015). There are four distinct parenting styles varying along these two dimensions 1. Authoritative parenting, associated with a high level of demandingness and rules with high responsiveness to the child; 2. Authoritarian parenting, linked to high demandingness but low responsiveness characterized by rules but with less influence from the child's needs; 3. Permissive/Indulgent parenting, combining low demandingness and high responsiveness with few rules but high engagement with the child's needs; and 4. Neglectful/Uninvolved parenting, which is associated with both low demandingness and low responsiveness (Brown, Halvorson, Hohen, Lazorick, & Skelton, 2015; Shloim, Edelson, Martin, & Hetherington, 2015). Authoritative parenting style seems to be most helpful for building sound food intake behaviors. Authoritative parenting style is characterized by caring parents who convey concrete, behavioral expectations and consistently enforce rules that encourage healthful eating but do not force consumption, and are accompanied by moderately restrictive practices about eating less healthful foods and snacks, all in climate of emotional warmth and sensitivity to the child (Contento, et al., 2016; Shloim, Edelson, Martin, & Hetherington, 2015). The different parenting styles may influence a child's development that might impact children's food

consumption energy intake, and weight status (Rhee, 2008; Shloim, Edelson, Martin, & Hetherington, 2015). The type of feeding style parents use may be a risk factor for childhood obesity (Alison et al., 2012; Shloim, Edelson, Martin, & Hetherington, 2015).

Child-Feeding Styles. Child-feeding styles may be viewed as a sub-category of parenting styles that are specific to mealtimes therefore the same dimensions of demandingness and responsiveness are applied in the feeding context (Shloim, et al., 2015). Child-feeding styles have been used to describe interactions between parents and children regarding feeding; parental feeding styles were found associated with child weight status (Contento, et al., 2016; Ventura & Birch, 2008). Research has found that parental feeding styles that include feeding in response to distress (emotional feeding) or using food as a reward (instrumental feeding) are both assumed to encourage the child to associate eating with cues other than hunger and increasing risk of eating in excess of physiological need (Contento, et al., 2016; Ventura & Birch, 2008). Child-feeding styles are different from parenting style in that they may vary from child to child within a family and are based on the context of the situation (Stang & Loth, 2011, 1302); they are specific behaviors used to influence children's eating, such as pressure to eat or restriction of certain foods (Ip, et al., 2007; Shloim, et al., 2015).

Indulgent parenting style used as a child feeding style consists of high responsiveness and low demandingness where parents encourage eating with few requests, requests made are nondirective, and supportive (i.e. parents permit child freedom to eat when they wish and choose what foods they prefer) (Shloim, et al., 2015). Authoritative parenting is both demanding and responsive to child's needs when used as feeding style. Parents encourage eating using supportive and nondirective behaviors (i.e. parents negotiate with children to eat well using social praise) (Shloim, et al., 2015). Uninvolved parenting style used as child feeding style is low demandingness and low responsiveness. Parents make few demands on their child to eat but when demands are made it is unsupportive (i.e. disorganized or few meal routines) (Shloim, Edelson, Martin, & Hetherington, 2015). The authoritarian parenting style used as a child feeding style is high demandingness, parents encourage eating with rule-based demands regardless of child preference (i.e. requires child to eat certain foods, to avoid

others; eat according to rules and expectations) (Shloim, Edelson, Martin, & Hetherington, 2015).

As a result, feeding style is an important influence on children's diet. How parents interact with their children in feeding situations describes feeding styles (Ip, et al., 2017; Shloim, Edelson, Martin, & Hetherington, 2015). Parental feeding styles and responses to children's appetitive traits may have profound consequences for the development of children's food preferences, eating habits, and body weights (Ek, et al., 2016). Some parental feeding practices such as forcing their child to clean their plate or using food as a reward interfere with the child's ability to self-regulate (Brown, Halvorson, Hohen, Lazorick, & Skelton, 2015), as a consequence, children may consume much more food than they may need. Young children can self-regulate the quantity of food and caloric intake, but no inborn mechanisms direct them to select and consume a well-balanced diet (i.e. a child does not know that they should eat fruits and vegetables instead of cookies and pizza for dinner) (Brown, et al., 2015). If children are allowed to decide when and how much to eat without outside interference, children eat as much as they need. Children have an innate ability to adjust their caloric intake to meet energy needs (Brown, et al., 2015).

On one hand, children learn what, when, and how much to eat based on the transmission of cultural and family belief attitudes, and practices. On the other hand, parents shape children's eating behaviors by the foods they make accessible to children (as food providers), by their own eating styles (as role models), how they discipline their children around food issues, and their actual child feeding practices (Contento, et al., 2016). Cultural values related to parenting in Latino families may produce different dimensions of feeding styles; "Although many factors contribute to Latino children's high prevalence of obesity, feeding style may represent an important modifiable factor for mitigating this disparity" (Ip, et al., 2017, p. 1209). Looking at child-feeding styles is important, however, it is also important to collect information on parents' perspectives on child nutrition intake when identifying factors that can contribute to childhood obesity.

Parents' perspective on child feeding styles includes attitudes of feeding young children such as pressure to eat, restriction, monitoring of the child's food intake, or the use of rewards for food consumption. Feeding style refers to the specific goal-directed behaviors

used by parents to directly influence their children's eating (Shloim, Edelson, Martin, & Hetherington, 2015). It reflects the way that parents feed their children and the specific things parents do to encourage or discourage eating such as pressuring the child to eat a specific food or to eat more food (Hughes et al., 2013). Stang and Loth (2011) indicate that child feeding styles are types of behavioral strategies that aim to moderate children's eating behaviors. Child feeding styles consist of a wide range of behaviors, including modeling eating behaviors (both healthy and unhealthy); coercing or pressuring children to eat specific foods or meals' rewarding behaviors with highly palatable, energy-dense foods; withholding food as punishment; restricting food intake; concern about or feeling responsibility for a child's weight; and determining the availability and accessibility of specific foods. Stang and Loth (2011) has emphasized the important role that parent-child interactions in the feeding context have in shaping children's food preferences and intake patterns (Stang & Loth, 2011). Research demonstrates that using controlling food intake with children, such as coercing, rewards, or pressure related to food intake, may have negative effects on the quality of children's diets by altering a child's food preferences. In addition, knowing that controlling child's food intake has the potential to negatively impact both children's food preference and intake patterns illustrates the pathway through which child feeding might have the potential to also negatively impact a child's weight status, thereby contributing to childhood overweight and obesity (Stang & Loth, 2011).

Latino Farm-Working Families

Agriculture in Idaho is an important part of the state's way of life and represents a substantial portion of the state economy. Latino labor is vital for Idaho farming, especially in southern Idaho. About 30% of Idaho farm-workers are Hispanic speaking immigrants. Most Latino Migrant and Seasonal Farmworkers (MSFW) work as hired laborers planting, cultivating, and harvesting crops as needed during the agricultural season (Quandt, Grzywacz, Trejo, & Arcury, 2014). Migrant Farmworkers move and establish temporary residence to do farm work, while Seasonal Farmworkers reside in the same area year-round, employed part of the year as farmworkers (Quandt, et al., 2014).

Childhood obesity has increased substantially among Latino children, placing them at a higher risk for its related health consequences (Quandt, et. al, 2014). Limited attention

has been given to the concern on obesity among Latino children, in particularly MSFW communities. Therefore, obesity could be regarded as an outcome of occupational exposure that considers the cultural lifestyle and vulnerability of farmworkers (Borre, Ertle, & Graff, 2010). It is important to identify parental child-feeding styles that reflect their experiences, and family environments in which these children are raised (Quandt, et al., 2014). Children whose parents are part of the Latino Migrant and Seasonal labor are at risk for obesity (Rosado, Bennett Johnson, McGinnity, & Cuevas, 2013). Their parents' occupations could foster a lifestyle that often places them at risk for suboptimal health related to infrequent grocery shopping, limited income, lack of garden space, and worrying about impending food insecurity (Quandt, et al., 2014, Rosado, et al., 2013). Those constraints may limit the opportunity for parents to purchase fresh foods like fruits and vegetables, and "encourage diets concentrated on energy dense starches and sugars and other less expensive products unlikely to spoil" (Quandt, et al., 2014, p. 12).

Dietary Assimilation. Families who immigrated from Mexico to the United States (US) have shown that "acculturation has a positive relationship with the likelihood of being overweight and with over-weight-related behaviors" (Akresh, 2007, p. 405). Acculturative factors may include, but are not limited to, consuming a more westernized diet along with sedentary behaviors which can contribute to the deterioration in their health. Worsening health has also been reported by those who have been in the US longer due to greater levels of dietary change (Akresh, 2007). Creating more sedentary habits and consuming diets that are higher in fat, is also linked to the amount of time in the US. Time spent in the US is associated with a "shift away from an active lifestyle and a traditional healthy diet of tortillas, beans, and rice" (Akresh, 2007, p. 405).

In the study by Borre, Ertle, and Graff (2010) the farmworkers themselves were aware of their weight gain and the risks of obesity, but they lacked knowledge on how to control or prevent the health problem for themselves and their children. Immigrants working long hours do not have time for meal preparation. Akresh (2007) also found that households with younger members may be more likely to consume prepared and easy-to-fix foods, contributing to the degree of negative dietary change. Furthermore, US diets consist of more processed foods, than those in other countries, and those processed foods are high in sodium

and fat. If immigrants are consuming high processed diets, this can lead to obesity (Akresh, 2007).

Food Insecurity

Obesity has been linked to the problem of food insecurity among MSFW communities. Food insecurity is associated with poverty; “Food insecurity is a lack of access at all times to enough food for an active and healthy lifestyle due to socioeconomic and environmental barriers” (Borre, Ertle, & Graff, 2010, p. 444). Dietary diversity is often lacking in food insecure households and low levels of fruit and vegetable consumption is found; serious health implications are often associated with living in food insecure households (Borre, Ertle, & Graff, 2010). One of many reasons is the family income. “The federal fair labor standards act exempts farmworkers from the usual provision of overtime wages: those on small farms or farms that employ workers only seasonally are not entitled to the federal minimum wage” (Quandt, Grzywacz, Trejo, & Arcury, 2014, p.73). A variety of health problems related to nutrition are often faced by children of farmworkers, due to food insecurity or living in situations with limited cooking for food storage facilities (Quandt, et al., 2014). Although government safety-net programs intend to ensure children’s access to healthy foods and health care, they are not always available or/utilized by the Latino farm-working community because many farmworkers are undocumented and migrated (Ip, et al., 2017). In order to improve food security in households farmworkers depend on supplemental food programs provided through Women’s Infants and Children’s (WIC), Head Start programs, and social networking (Borre, Ertle, & Graff, 2010).

Summary. Parental child feeding style may impact children’s weight status. Also, authoritative parenting style is recommended. Parents who follow the authoritative guidelines are using disciplinary methods which are supportive, these rules help children become more confident and socially responsible as well as more cooperative. Authoritative parents are able to deliver clear standards to their children based on monitoring and imparting their behaviors. Authoritative parents were found to be more nurturing, supporting, involving, and provided more structure for healthy eating habits with their children than those who were less responsive such as authoritarian and uninvolved parents. Limited attention has been given to childhood obesity among Latino MSHS communities. Given the serious consequences of

unhealthful dietary patterns among children, there is a need for a greater understanding of the influences on parental feeding practices. The objectives of this study include understanding MSHS Latino parent's perspectives on nutrition intake for their children ages three-five years old, examining MSHS Latino parental child-feeding styles, and identify MSHS children ages three-five years old health indicators by measurement of anthropometrics, determine whether there is an association between parental perspectives on children's nutrition intake, child feeding styles and child's current weight status.

Chapter III: Methods

Introduction

This study examined MSFW parents' perspective on child nutrition intake and child-feeding styles given their child's weight status. Child-feeding styles may promote overeating or overweight in children (Faith, et al., 2004). Children's food consumption, energy intake, and weight status are impacted by child-feeding styles (Hughes et al., 2005). For example, the parental child feeding styles used by authoritative parents resulted in a lower BMI compared to those with indulgent parents who had higher BMI (Huges et al., 2005). In this study, studying child-feeding styles and children's eating behaviors (i.e., nutrition intake) during the preschool age is important, on one hand children are still highly dependent on their parents for the structuring of food intake, but are also developing more autonomy through preschool and social interactions with other children, under the supervision of other adults and outside their parent's direct control (Anna Ek, 2016). Previous studies have shown that obesity interventions may be most effective in the preschool age range; the preschool age is therefore a crucial time for parents to develop healthy eating behaviors and messages for their children.(Anna Ek, 2016). It is also when distinct eating behaviors are formed (Anna Ek, 2016). Identifying these associations is important for the development of a clear framework to guide childhood obesity interventions.

Research Purpose and Objectives

This study stemmed from a former project: Muévete y CAMBIA tu Vida! (Muévete) developed by Professor Helen Brown, the graduate student Jennie Davis, and Dr. Samantha Ramsay for Community Council of Idaho, Migrant and Seasonal Head Start Centers as an assessment and evaluation of strategies for childhood obesity prevention. The purpose was to assess BMI status and nutrition practices to establish a baseline and determine the effectiveness of the Muévete intervention. The existing data from the Muévete project was used in this study to analyze the Latino MSFW parents with children in MSHS Centers responses to nutrition history questionnaire, and child BMI calculations. This study will examine (1) what are parents' perspective on child nutrition intake? and (2) what are parents' feeding styles across the different child weight categories?

Methods

Research design and classifications

A literature review was conducted to identify relevant studies about nutrition intake and feeding styles to childhood obesity in 3-5-year-old preschool aged children. The data was derived from the MSHS nutrition history questionnaire and the results for children ages 3-5-years old were analyzed. Permission was obtained from Community Council of Idaho MSHS, and Professor Helen Brown, to use and analyze the data. MSHS staff interviewed the children's parents/guardians using the nutrition history questionnaire and the information was inserted into ChildPlus software database to generate the data results for further analyses. The database provides information on parental feeding-styles and parents' perspective of child nutrition intake. The database also provides anthropometric measurements that were used to identify the child weight status.

Participants

The sample population for this study were parents/guardians of children ages 3-5 years-old from MSHS centers in Idaho. Participants were recruited originally for the Muévete Project, all parents of children enrolled at MSHS Centers were invited to participate during the Muévete project. Parents of children with disabilities or nutritional restrictions were excluded in the study. The permission to use the data for this project was granted by Muévete Creators, and Community Council of Idaho. The selected participants were only the parents/guardian with children ages 3-5 years old.; all parents signed a consent form for both themselves and their children. A total of 384 participants were analyzed for the study. The study was approved by the University of Idaho Institutional Review Board (IRB).

Methodology and Materials

The Muévete Project obtained approval from the University of Idaho Office of Sponsored Programs (OSP) allowing the project to contact Community Council of Idaho for participation of their Migrant and Seasonal Head Start Centers. For this study obtaining Community Council of Idaho's authorization was necessary and important in order to conduct and report the findings of this study.

The theories that serve as foundation in this study were Social Ecological Theory; it focuses on efforts to prevent negative health outcomes (e.g., childhood obesity) or promote positive outcomes (e.g., maintaining a healthy weight) and to address in public health outcomes, rather than focus on personal behavior. This theory will differentiate influences on human healthy capacity at multiple levels from community-wide to individual practices. The second theory applied was Family Systems Theory, this theory acknowledges the importance of parent-child interactions, as well as the primary and secondary order systems in families that shape interactions around food. For example, how family develop rules (e.g., is there a set dinner time), the power distribution among family members (e.g., in the parent child meal time interaction who decides how much to eat), and external and internal family boundaries (are the boundaries flexible, balanced do children get to decide what to eat).

A nutrition history questionnaire was developed specifically for the purpose of the Muévete Project and was the same questionnaire used to analyze the available dataset in this study. The nutrition history questionnaire was informed by carefully constructed focus groups to identify nutrition behaviors, feeding styles, physical activity and environmental nutrition factors among MSHS families. Focus groups were also conducted among MSHS teachers and staff to gain insight into nutrition, physical activity, feeding styles and concerns of MSHS families. Once developed, the questionnaire was carefully reviewed, piloted, and revised with input from MSHS staff, and parents. The questionnaire was composed of 26 questions and was divided into three sections that includes topics on child's beverage and food intake patterns (nutritional practices, feeding styles, and parenting styles), physical activity, and parental concerns. Trained MSHS staff members (i.e., Case Managers) administered the nutrition history questionnaire to the parents during the enrollment period at MSHS Centers.

For the purpose of this study the nutrition history questionnaire was used to obtain nutrition information of children ages 3-5 years old. This study focused on question 12 because it asked parents about child's eating and drinking patterns (i.e. how often child consumed X amount of foods by answering most days, some days, or rarely) this question had a total of 12 sub questions ranging from fruits and vegetable consumption, grains, dairy, energy dense foods and highly processed foods (chips, pizza, cookies, ice cream). The

questionnaire did not ask for specifics of what and how much the child ate, but rather if the child ate a variety of appropriate foods high in nutrients on ‘most days’ during the week. The second question used in this study from the nutrition history questionnaire was question 17: asking parents to respond to the following 9 sub questions as mostly, sometimes, or rarely true in regards to eating patterns (i.e. adults in the house decide what foods are purchased, family eats meals together, my child sees me eat fruits and vegetables). The first two statements of question 17 relate to the division of responsibility of feeding young children (i.e. it is recommended that caregivers decide what variety of healthful foods to offer at mealtimes, and that child decides which of the foods to eat, how much to eat, and whether to eat at all). This set of questions would provide info on the families’ nutritional knowledge about parents’ perspective on child nutrition intake, and child-feeding styles.

Anthropometric. Head Start programs requires collection of height, weight and BMI (children over 2 years) for all participants. Anthropometric measurements (height and weight) of the enrolled children ages 3-5 years old, in MSHS centers were analyzed from the dataset. Weight and height measurements and age of the child were used to calculate Body Mass Index (BMI) for children. A code book of all the information gathered is included in the appendixes and includes BMI cut-off information. To collect the anthropometric measurements throughout the MSHS centers, a protocol was developed to ensure all centers were using professional quality instruments correctly and that measures were taken to provide accurate measurements. Primary Investigator (PI) (Professor Helen Brown) and Graduate Student (Ms. Jennie Davis) trained Case Managers at all Community Council of Idaho Migrant and Seasonal Head Start Centers. The Case Managers at each center were responsible for gathering the children’s anthropometric measurements upon receiving the training. Testing instruments included: a stadiometer to measure height for children, and a digital weight scale to measure weight. Height and weight measurements are needed in order to calculate BMI. A tracking form was created for Case Managers to input the results. The measurements were taken twice throughout the school year, once in the beginning of the season (during enrollment May/June) and a final measurement was accomplished before the completion of MSHS summer season (October/November). In this study the dataset came from the measurements and nutrition history questionnaire responses collected during enrollment May/June 2017.

The standardized protocol is listed here for height and weight included:

- Make sure the equipment is properly installed/mounted: it should be on same level hard surface floor no carpet and preferably be installed in a room where privacy is appropriate.
- Easier to use a digital weight scale, the scale should be calibrated to ensure accuracy.
- Participants must remove shoes and heavy clothing such as jackets, sweaters before getting on the scale.
- Turn on the scale and make sure the scale reads 0, before the participant stands on the scale.
- Once it reads 0 instruct participant or demonstrate to participant how they must stand on the scale for example they will stand in the center of the scale facing the wall with hands to their sides.
- Once you get the first weight measurement make sure it is in kg and repeat the steps one more time to ensure a measurement error of greater than or equal to 0.1 weight measurement. Perform the weight until your two weight measurements are the same or the error falls within the 0.1 reading.
- To conduct the Height measurement a wall mounted stadiometer will be used.
- Have participant take off their shoes and heavy clothing.
- If participants have a ponytail or barrettes in their hair that interfere with the height instrument have them remove it for the purpose of the height procedure.
- For height measurement make sure the participant has the heels of both their feet against the wall, so participants heels, buttocks, back and head should be touching the wall when measuring their height.
- Two measurements will be conducted for each participant to ensure an error of greater than or equal to 0.1.
- Record the measurement outcomes on the appropriate sheet provided.

Data Analysis

The purpose of this study is to analyze existing data on Latino MSFW parents of preschool children in MSHS Centers responses to nutrition history questionnaire, and child BMI calculations. This study will examine (1) What do parents' perspectives of child nutrition intake look like in MSHS families, and (2) What are the child-feeding styles across the different weight categories. The data were reorganized into discrete variables to measure child's nutritional history and parental feeding behaviors through the nutrition history questionnaire (Answers: Yes=1, No=2; Female=1, Male=2). The results provided insight to parents' perceived nutritional knowledge through nutrition intake and feeding styles. The results were analyzed using SPSS software.

The second type of data will be collected as categorical variables (Age: 3 years=1, 4 years=2, 5 years=3; Mostly=1, Sometimes=2, Rarely=3; BMI: underweight=1, normal/healthy=2, overweight=3, obese=4). This data included child's Body Mass Index (BMI) that was calculated and categorized into four sections, responses to question were categorized into three sections in order to create numerically coding to analyze data on SPSS software. This information was used to construct tables representing responses from nutrition history questionnaire to child's BMI.

Methods Conclusion

The continuous increasing rates of overweight and obese children have been identified in the Latino population (Quandt, Grzywacz, Trejo, & Arcury, 2014); it requires furthering observation and cultural understanding of parental child-feeding styles and nutritional intake. The addition of this material can aid in providing information about what feeding styles and nutrition intake the Latino MSHS families are using with their children. Using the existing data collection from the Muévete project I was able to create codes on excel to transfer into SPSS software generating the data needed to create the results tables of parents' responses to question 12 and 17 of the nutrition history questionnaire. These questions provide results to understand child feeding styles, and nutrition intake in regards to child's weight.

Chapter IV: Findings

Introduction

Relatively few studies of child feeding styles and children's weight have been focused specifically on Latino families. Despite the fact that Latinos are the largest ethnic minority group in the U.S. (Tschann, et al., 2015). The major purpose of this study was to examine the child-feeding styles and parents' perspective on child nutrition intake and their child's weight status in 3-5 years old children at MSHS programs. The results in this study help identify parents' perspective on child nutrition practices and child-feeding styles in terms of child obesity status based on the Muévete y CAMBIA tu Vida! project originally initiated by Professor Helen Brown. Approval was received from Helen Brown and the Community Council of Idaho Migrant and Seasonal Head Start Centers to use their dataset for my project. The nutrition history questionnaire was used to answer two primary research questions (1) what are parents' perspective on child nutrition intake, (2) what parents' feeding styles are across the different weight categories.

Results

The results for this study provide insight and information about parents' perspective of child nutrition intake and feeding styles parents' of MSHS Latino community in southern Idaho reported during the nutrition history questionnaire. Trained staff from Community Council of Idaho MSHS interviewed parents in Spanish using the nutrition history questionnaire during child enrollment periods. Participants responded to an interviewer-administered questionnaire designed to collect information regarding feeding style, and household characteristics. The nutrition history questionnaire had 26 questions, to answer research question 1 for this study, question 12 and its' subparts were used to analyze parent's responses when asked if the child ate a variety of foods high in nutrients on 'most days.' The questionnaire asked parents how often their child ate certain types of foods such as fruits, vegetables, and highly processed foods. Given the USDA recommendation, MyPlate is broken out into 5 food groups that constitute the building blocks for a healthy diet, the groups are fruits, vegetables, grains, protein and dairy (USDA, 2018). For question 12 we divided the sub-questions into 7 set of food groups this will help categorize the data tables to show legume intake vs meat for the protein as well as include the highly processed foods category.

The healthy foods group includes- fruits, vegetables, grains, legumes, meat and dairy. Highly processed foods included foods such as candy, cookies, and chips. Parents rated their children's consumption on a given food group as most days, some days, or rarely in any given week. To measure the first purpose of the study; what are parent's perspectives of child nutrition intake among the four-child weight categories (underweight, normal, overweight, obese) question 12 was analyzed. The analyses were performed using Statistical Package for the Social Sciences (SPSS) Software, geared toward working with survey data. Descriptive statistical cross tabulations were created to look at weight (row) and question 12 including subparts (columns).

The 2015-2020 Dietary Guidelines for Americans recommend consumption of fruits, vegetables, whole grains, low-fat dairy, and lean meats without excessive calories from saturated fat or sugar in those 2 years and older (Ip, Marshall, Arcury, Suerken, Trejo, Skelton, Quandt, 2017). A significant percentage of children in the United States do not meet these recommendations, and this is particularly true for Latinos (Ip, et al., 2017). The following tables are broken up into 7 food categories (i.e., grains, fruits, vegetables, beans/legumes, dairy, protein (animal), and highly processed foods (e.g., fast food, chips, and cookies) and include the results asking, how often does (Child's Name) eat the following foods:

Grains. Grain consumption in preschool children of Latino MSFW parents was analyzed for food group 1 (tables 4.1-4.3). In this food group the following foods were included: hot and cold cereals, bread and tortillas, rice and pasta. When the percentages of the average consumption of overweight and obese weight categories were compared to underweight and normal weight categories, there was not a meaningful difference between child nutrition intake and weight status. The results between weight categories and eating grains was that majority of respondents of overweight and obese children responded to 'most days' (59%) compared to the children in the underweight and normal weight category 'most days' (52%). These results are shown below in Tables 4.1-4.3.

Table 4.1: Frequencies and row percentages showing correspondence between consumption of hot and cold cereals and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	57% (17)	33% (10)	10% (3)	0% (0)	100% (30)
Normal	52% (120)	37% (86)	8% (19)	3% (7)	100% (232)
Overweight	76% (42)	18% (10)	6% (3)	0% (0)	100% (55)
Obese	46% (31)	43% (29)	9% (6)	2% (1)	100% (67)
	55% (210)	35% (135)	8% (31)	2% (8)	100% (384)

Table 4.2: Frequencies and row percentages showing correspondence between consumption of bread and tortillas and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	60% (18)	30% (9)	3% (1)	7% (2)	100% (30)
Normal	66% (152)	26% (60)	7% (16)	2% (4)	100% (232)
Overweight	75% (41)	15% (8)	11% (6)	0% (0)	100% (55)
Obese	58% (39)	37% (25)	5% (3)	0% (0)	100% (67)
	65% (250)	27% (102)	7% (26)	2% (6)	100% (384)

Table 4.3: Frequencies and row percentages showing correspondence between consumption of rice and pasta and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	30% (9)	60% (18)	10% (3)	0% (0)	100% (30)
Normal	49% (113)	45% (105)	4% (10)	2% (4)	100% (232)
Overweight	49% (27)	49 (27)	2% (1)	0% (0)	100% (55)
Obese	37% (25)	52% (35)	10% (7)	0% (0)	100% (67)
	45% (174)	48% (185)	6% (21)	1% (4)	100% (384)

Fruit. Ip, et al. found recent data indicating that fruit and vegetable consumption among the Latino children was low. Also, on one of CDC reports during 2003-2010, US children ate 67% more whole fruit which is an encouraging news but still not eating the recommended amounts (Arias, Collins, & Kim, 2010). In order to look at the fruit consumption of children of Latino MSFW parents, food group 2 (table 4.4): fruits were analyzed. The study found that the average results between weight categories and fruit consumption was that majority of respondents of overweight and obese children responded to ‘most days’ (87%) consuming fruit compared to the children in the underweight and normal weight category ‘most days’ (80.5%). These results are shown below in Table 4.4. It is important that children consume an adequate amount of fruits in their daily food intake because it adds nutrients to children’s diets.

Table 4.4: Frequencies and row percentages showing correspondence between consumption of fruits and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	77% (23)	23% (7)	0% (0)	0% (0)	100% (30)
Normal	84% (195)	13% (31)	2% (5)	0% (1)	100% (232)
Overweight	89% (49)	11% (6)	0% (0)	0% (0)	100% (55)
Obese	85% (57)	12% (8)	3% (2)	0% (0)	100% (67)
	84% (324)	14% (52)	2% (7)	0% (1)	100% (384)

Vegetable. The 2010 National Health and Nutrition Examination Survey (NHANES) CDC report found that 93% of children in the U.S. did not meet vegetable recommendations (Arias, Collins, & Kim, 2010). Vegetable consumption is extremely important in early child growth stages because adequate vegetable consumption adds under consumed nutrients to diets and reduces the risks for leading causes of illness, death and helps manage body weight (Arias, Collins, & Kim, 2010). Vegetables constitute food group 3 (table 4.5): vegetables. The average results between weight categories and consuming vegetables was that majority of respondents of overweight and obese children responded to ‘most days’ (62.5%) compared

to the children in the underweight and normal weight category ‘most days’ (54%). These results are shown below in Table 4.5.

Table 4.5: Frequencies and row percentages showing correspondence between consumption of vegetables and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	53% (16)	37% (11)	10% (3)	0% (0)	100% (30)
Normal	55% (127)	31% (72)	14% (32)	0% (1)	100% (232)
Overweight	62% (34)	28% (15)	9% (5)	2% (1)	100% (55)
Obese	63% (42)	27% (18)	10% (7)	0% (0)	100% (67)
	57% (219)	30% (116)	12% (47)	1% (2)	100% (384)

Diets high in fiber are preventative of both childhood obesity and constipation (Ramsay, Roe, Davis, Price, & Johnson, 2016). Diversity in children’s diets is frequently lacking, and children’s consumption of fiber-rich, nutrient dense foods (i.e., vegetables and legumes) is also low (Ramsay, Roe, Davis, Price, & Johnson, 2016). Early childhood is an important time for introduction of nutrient dense, high-fiber foods as this is a key time to develop children’s food preferences and influence lasting dietary patterns (Ramsay, Roe, Davis, Price, & Johnson, 2016).

Legume. Consumption of legumes constitute food group 4 (table 4.6): legumes. The average results between weight categories and consuming legumes/beans was that majority of respondents of overweight and obese children responded to ‘some days’ (44%) compared to the children in the underweight and normal weight category ‘some days’ (45.5%). The results are shown below in Table 4.6.

Table 4.6: Frequencies and row percentages showing correspondence between consumption of beans/legumes and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	37% (11)	50% (15)	13% (4)	0% (0)	100% (30)
Normal	42% (97)	41% (95)	14% (32)	3% (8)	100% (232)
Overweight	58% (32)	36% (20)	6% (3)	0% (0)	100% (55)
Obese	33% (22)	52% (35)	10% (7)	5% (3)	100% (67)
	42% (162)	43% (165)	12% (46)	3% (11)	100% (384)

Dairy. It is recommended that children on 1400 calorie diet consume 2 ½ cups of dairy per day (i.e. 1 cup milk, 1 cup yogurt, or 1 cup fortified soy beverage) (Myplate plan: 1400 Calories, Age 4-8, 2018). Dairy food consumption was analyzed from the parental responses on the nutrition history questionnaire. Food group 5 (table 4.7): dairy was created, in this food group the following foods were included; cheese and yogurt. The finding indicated that majority of respondents of overweight and obese children responded to ‘most days’ (77%) compared to the children in the underweight and normal weight category ‘most days’ (65.5%). These results are shown below in Table 4.7.

Table 4.7: Frequencies and row percentages showing correspondence between consumption of cheese/yogurt and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	57% (17)	30% (9)	13% (4)	0% (0)	100% (30)
Normal	74% (172)	24% (55)	1% (3)	1% (2)	100% (232)
Overweight	78% (43)	18% (10)	2% (1)	2% (1)	100% (55)
Obese	76% (51)	21% (14)	3% (2)	0% (0)	100% (67)
	74% (283)	23% (88)	3% (10)	1% (3)	100% (384)

Protein. Adequate energy intake to meet child's individual needs has a protein-sparing effect; with adequate energy intake, protein is used for growth and tissue repair rather than for energy (Brown, et al., 2011, p. 278). Protein consumption was analyzed in food group 6 (tables 4.8-4.9): protein, in this food group the following foods were included; meat, poultry, fish, hot dogs and processed meats. The average results between weight categories and eating protein was that majority of respondents of overweight and obese children responded to mostly eating meat, poultry and fish (52%) compared to the children in the underweight and normal weight category (44.5%). (Table 4.8). The majority of respondents of overweight and obese children responded to sometimes or some days eating hot dogs and processed meats (52%) compared to the children in the underweight and normal weight category (53.5%). (Table 4.9).

Table 4.8: Frequencies and row percentages showing correspondence between consumption of meat/poultry/fish and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	43% (13)	50% (15)	7% (2)	0% (0)	100% (30)
Normal	46% (107)	44% (102)	9% (20)	1% (3)	100% (232)
Overweight	46% (25)	47% (26)	7% (4)	0% (0)	100% (55)
Obese	58% (39)	40% (27)	2% (1)	0% (0)	100% (67)
	48% (184)	44% (170)	7% (27)	1% (3)	100% (384)

Table 4.9: Frequencies and row percentages showing correspondence between consumption of hot dogs/processed meats and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	20% (6)	53% (16)	27% (8)	0% (0)	100% (30)
Normal	29% (67)	54% (125)	16% (37)	1% (3)	100% (232)
Overweight	44% (24)	40% (22)	16% (9)	0% (0)	100% (55)
Obese	24% (16)	64% (43)	12% (8)	0% (0)	100% (67)
	29% (113)	54% (206)	16% (62)	1% (3)	100% (384)

Processed Foods. Highly processed foods are products that are convenient, highly palatable, and contain few whole ingredients (Moran, Khandpur, Polacsek, & Rimm, 2019). Highly processed foods make up a growing share of the US food supply, providing 58% of energy and 89% of added sugars in the American diet (Moran, Khandpur, Polacsek, & Rimm, 2019). Food group 7 highly processed foods (tables 4.10-4.12): highly processed foods, in this food group the following foods were included; candy, cookies, cake, pan dulce, ice cream, fast food (pizza), chips and salty snacks. The results between weight categories and eating protein was that majority of respondents of overweight and obese children reported to sometimes eat these highly processed foods (54%) compared to the children in the underweight and normal weight category (51%). (Table 4.10-4.12).

Table 4.10: Frequencies and row percentages showing correspondence between consumption of candy/cookies/cake/pan dulce/ice cream and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	3% (1)	47% (14)	50% (15)	0% (0)	100% (30)
Normal	8% (18)	50% (116)	41% (96)	1% (2)	100% (232)
Overweight	15% (8)	53% (29)	31% (17)	2% (1)	100% (55)
Obese	8% (5)	61% (41)	30% (20)	2% (1)	100% (67)
	8% (32)	52% (200)	39% (148)	1% (4)	100% (384)

Table 4.11: Frequencies and row percentages showing correspondence between consumption of fast food/pizza and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	3% (1)	50% (15)	43% (13)	3% (1)	100% (30)
Normal	10% (23)	40% (93)	45% (105)	8% (11)	100% (232)
Overweight	15% (8)	44% (24)	42% (23)	0% (0)	100% (55)
Obese	9% (6)	49% (33)	37% (25)	5% (3)	100% (67)
	10% (38)	43% (165)	43% (166)	4% (15)	100% (384)

Table 4.12: Frequencies and row percentages showing correspondence between consumption of chips/salty snacks and child weight status.

Weight Category	Most Days % (n)	Some Days % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	7% (2)	67% (20)	27% (8)	0% (0)	100% (30)
Normal	22% (51)	51% (118)	23% (53)	4% (10)	100% (232)
Overweight	9% (5)	56% (31)	35% (19)	0% (0)	100% (55)
Obese	16% (11)	61% (41)	19% (13)	3% (2)	100% (67)
	18% (69)	55% (210)	24% (93)	3% (12)	100% (384)

In summary, sub-questions 1 through 8 represented the five major food groups (e.g., sub-question 1, 2, and 3 represented the frequencies of grain consumption) and sub questions 9 through 12 represented what we call highly processed foods. Parents of children at the overweight status reported their children consumed more or double highly processed foods in comparison to children at the normal weight status. The only exception item is chip/salty snacks; children with the normal weight status seemed to consume more chip/salty snacks than children with the overweight status (i.e., 22% versus 9% respectively) based on parental reports on the frequency of food eaten by their children.

One important influence on children's weight is child nutrition intake. Child nutrition intake is thought to influence children's weight gain, through children's eating behavior and nutritional intake (Tschann, et al., 2015). The quantity and quality of any food intake would be one major factor on child's weight status. The question 12 results presented an overview of how children in different weight categories consume food across different food groups.

This study also analyzed question 17 because it collected information regarding child-feeding styles around mealtime environments. For example, coaxing children to eat more, giving rewards for eating, or punishments for not eating can result in meal time struggles and can cause the child to become less sensitive to their own hunger and fullness cues. Eating with the TV on or other electronic gadgets reduces family conversation, takes the focus off the mealtime, and exposes the child to advertising for less nutritious foods (Brown, Culley, Wiest, & Vega, 2018). To answer the second research question of the study; what parents' feeding styles are across the different weight categories; question 17 on the nutrition history questionnaire dataset was analyzed to provide the results of what child-feeding styles parents were using during mealtimes to better understand what feeding styles and nutrition intake were being used at home. The following tables include the results to questions about child-feeding styles used during mealtimes between child and parent.

Results. Child-feeding styles and child nutrition intake can be viewed as a sub-category of parenting styles that are specific to mealtimes. The nutrition history questionnaire data collection for question 17 was analyzed. The following tables summarized parents' perspectives regarding their child feeding style for their children at home based on their child's weight status. The first two questions relate to the division of responsibility of feeding young children. It is recommended that caregivers decide what variety of healthful foods to offer at mealtimes, and the child decides which of the foods to eat, how much to eat, and whether to eat at all (Brown, Davis, Ramsay, Vella, & Goc Karp, 2017). Eating together, modeling eating fruits and vegetables, and keeping a variety of fruits and vegetables in the house encourages children to eat a variety of healthy foods. The following tables represent the responses to questions from parents about child-feeding styles used during mealtimes between child and parent.

Previous research studies on child-feeding styles in Hispanic families showed that parents following the indulgent parenting style as a feeding style resulted in a higher BMI score (Ip, et al., 2017). Multiple studies have found that indulgent feeding style is associated with overweight and obesity, and with unfavorable intake of specific types of food (Ip, et al., 2017). Children whose parents follow indulgent parenting styles consumed fewer fruits, vegetables, and dairy products. Furthermore, permissive feeding style has also been linked to higher intake of low nutrient-dense foods (Ip, et al., 2017). Certain child feeding styles are predictive of general parenting style, the results of this study add to the cohesiveness of research on feeding style.

Child Decides how Much to Eat. Children’s energy intake and weight may also be related to parental strategies to control children’s eating behaviors (Orrell-Valente, Hill, Brechwald, Dodge, Pettit, Bates, 2006). Research shows that the division of feeding responsibility, in which parents provide healthful food during regular meals and snacks and the child, decides whether and how much to eat, is recommended by nutrition professionals when providing guidance on child-feeding practices (White, et al., 2011). The comparison between parents’ feedback when analyzing the nutrition history questionnaire data found that parents of children in the overweight (71%) and obese (87%) weight category reported less often to allow their children to make a decision of how much they want to eat, in parents with underweight (80%) and normal weight group (83%) allow child to decide how much they eat. (Table 4.13).

Table 4.13: Frequencies and row percentages showing correspondence between, allowing child to decide how much to eat and weight category.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	80% (24)	17% (5)	0% (0)	3% (1)	100% (30)
Normal	83% (192)	11% (25)	6% (14)	0% (0)	100% (232)
Overweight	71% (39)	24% (13)	6% (3)	0% (0)	100% (55)
Obese	87% (58)	10% (7)	2% (1)	2% (1)	100% (67)
	82% (313)	13% (50)	5% (18)	1% (3)	100% (384)

Adults Decide what Foods are Purchased. In this study, families with children in the overweight and obese weight categories reported consuming healthy food: fruits (87%) and vegetables (63%) most days. When comparing the consumption of fruits and vegetables in the overweight and obese weight categories, to overweight and obese weight responses to consumption of fast food (47%) responded to some days consuming fast food. Table 4.14 provides the results that parents responded to mostly (69%) eating meals together with children in the overweight, obese weight categories. The results were similar among all four-weight categories with the exception of (3%) of parents with children in the underweight category responding to mostly eating meals together. This study also found that overweight and obese child weight status response to adults mostly (95%) deciding what foods are purchased. (Table 4.14-4.15).

Table 4.14: Frequencies and row percentages showing correspondence between, adults in the house deciding what foods are purchased to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	97% (29)	0% (0)	0% (0)	3% (1)	100% (30)
Normal	96% (222)	4% (10)	0% (0)	0% (0)	100% (232)
Overweight	95% (52)	6% (3)	0% (0)	0% (0)	100% (55)
Obese	94% (63)	2% (1)	2% (1)	3% (2)	100% (67)
	95% (366)	4% (14)	0% (1)	1% (3)	100% (384)

Table 4.15: Frequencies and row percentages showing correspondence between, family eating meals together to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	3% (22)	27% (8)	0% (0)	0% (0)	100% (30)
Normal	85% (196)	12% (28)	3% (6)	1% (2)	100% (232)
Overweight	86% (47)	13% (7)	2% (1)	0% (0)	100% (55)
Obese	81% (54)	15% (10)	3% (2)	2% (1)	100% (67)
	83% (319)	14% (53)	2% (9)	1% (3)	100% (384)

Child sees Parent Eat Fruits and Vegetables. It is important for parents to model healthy food consumption so they can help the child develop healthy eating habits (White, Wilson, Burns, Blum-Kemelor, Singh, Race, Soto, Lockett, 2011). The nutrition history questionnaire asked parents to respond to the following statement, “my child sees me eat fruits and vegetables,” when comparing the responses in all four weight categories all parents responded to mostly (79%) eating fruits and vegetables in front of child. (Table 4.16).

Table 4.16: Frequencies and row percentages showing correspondence between, my child sees me eat fruits and vegetables to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	77% (23)	17% (5)	7% (2)	0% (0)	100% (30)
Normal	78% (181)	18% (41)	4% (9)	0% (0)	100% (232)
Overweight	82% (45)	15% (8)	4% (2)	0% (0)	100% (55)
Obese	79% (53)	15% (10)	5% (3)	2% (1)	100% (67)
	79% (302)	17% (64)	4% (16)	1% (2)	100% (384)

Offering Variety of Fruits and Vegetables. Offering a variety of fruits and vegetables in the house is a recommended child feeding practice (Brown, Culley, Wiest, & Vega, 2018). Parents’ were asked how often they offer fruits and vegetables to their children.

Over 80% of parents across child weight status reported to mostly offering fruits and vegetables to their child, the majority of parents of children classified in overweight or obese weight categories were said to mostly or most of the time be offered fruits and vegetables (86%) (Table 4.17).

Table 4.17: Frequencies and row percentages showing correspondence between, offering a variety of fruits and vegetable in house to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	87% (26)	13% (4)	0% (0)	0% (0)	100% (30)
Normal	86% (199)	14% (32)	0% (1)	0% (0)	100% (232)
Overweight	82 % (45)	15% (8)	4% (2)	0% (0)	100% (55)
Obese	90% (60)	9% (6)	0% (0)	2% (1)	100% (67)
	86% (330)	13% (50)	1% (3)	0% (1)	100% (384)

Keeping Fruits and Vegetables Ready to Eat at Home. Parents have a significant influence on the diets of preschool-aged children and can shape the development of healthful eating habits. This influence may be observed in the types of foods made available and accessible in the home (White, et al., 2011). Parents' were asked if they keep fruits and vegetable ready to eat in the house. Majority of children classified in overweight or obese weight categories were said to mostly or most of the time keep fruits and vegetables ready to eat in the house (89%) (Table 4.18).

Table 4.18: Frequencies and row percentages showing correspondence between, keeping fruits and vegetables ready to eat in my house to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	83% (25)	17% (5)	0% (0)	0% (0)	100% (30)
Normal	84% (194)	13% (31)	2% (5)	1% (2)	100% (232)
Overweight	89% (49)	7% (4)	4% (2)	0% (0)	100% (55)
Obese	88% (59)	9% (6)	0% (0)	3% (2)	100% (67)
	85% (327)	12% (46)	2% (7)	1% (4)	100% (384)

TV on While Eating. Understanding of parents' influences on children's food environment have been studied in recent years (Orrell-Valente, et al., 2006). Orrell et al., (2006, p.37) found that "an unstructured mealtime environment, for example, is more likely to be characterized by television viewing during meals and by consumption of foods high in fat and sugar." Parents' were asked if a TV is on when child eats. Majority of children classified in overweight or obese weight categories were said to rarely have a TV on while eating, 56% (Table 4.19).

Table 4.19: Frequencies and row percentages showing correspondence between, a TV being on when child eats to child weight status.

Weight Category	Mostly % (n)	Sometime s % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	13% (4)	23% (7)	57% (17)	7% (2)	100% (30)
Normal	11% (25)	33% (77)	55% (127)	1% (3)	100% (232)
Overweight	15% (8)	26% (14)	56% (31)	4% (2)	100% (55)
Obese	6% (4)	33% (22)	55% (37)	6% (4)	100% (67)
	11% (41)	31% (120)	55% (212)	3% (11)	100% (384)

Parent ask Child to Eat More. By allowing children to make decisions about what and how much to eat, children learn to self-regulate their eating. It is the child's responsibility to decide what, how much and if they want to eat, the parents' role is to offer a

variety of nutrient dense foods and take charge of planning and preparing meals (Evers, 1997). It was important to analyze parents' response when asked if child does not eat enough, I ask him/her to eat more. Parents of children classified in overweight or obese weight categories reported mostly or most of the time they would ask their child to eat more (mean=49% of responses) (Table 4.20).

Table 4.20: Frequencies and row percentages showing correspondence between, child does not eat enough, I ask him/her to eat more to child weight status.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	57% (17)	23% (7)	13% (4)	7% (2)	100% (30)
Normal	44% (103)	31% (72)	23% (53)	2% (4)	100% (232)
Overweight	51% (28)	31% (17)	16% (9)	2% (1)	100% (55)
Obese	46% (31)	34% (23)	16% (11)	3% (2)	100% (67)
	47% (179)	31% (119)	20% (77)	2% (9)	100% (384)

Parent Rewards Child for Eating. Research has suggested that a child's preference for certain food items decreases when the child receives a reward for eating the food or is pressured (White, et al., 2011). Rewarding children (parental instrumental feeding) with food for perceived correct behaviors and punishing by taking away food for perceived incorrect behaviors are independently associated with binge eating in adulthood (Mason, 2015). From the nutrition history questionnaire, parents were asked if they give their child a reward for eating food. Majority of children classified in overweight or obese weight categories were said to rarely reward for eating food (55%) (Table 4.21).

Table 4.21: Frequencies and row percentages showing correspondence between, I give my child a reward for eating food to child weight category.

Weight Category	Mostly % (n)	Sometimes % (n)	Rarely % (n)	Missing info % (n)	Total % (n)
Underweight	20% (6)	27% (8)	47% (14)	7% (2)	100% (30)
Normal	12% (27)	25% (59)	59% (136)	4% (10)	100% (232)
Overweight	15% (8)	27% (15)	58% (32)	0% (0)	100% (55)
Obese	6% (4)	31% (21)	52% (35)	10% (7)	100% (67)
	12% (45)	27% (103)	57% (217)	5% (19)	100% (384)

Conclusion. This study investigated the variables between parental feeding styles, parents' perspective of child nutrition intake and child weight status. Most parents of children in the overweight or obese weight category reported positive feeding styles (authoritative) and practices. Children are allowed to decide how much they eat, adults make food purchases, family eats meals together, child sees parent eat fruits and vegetables, variety of fruits and vegetables are offered and kept in the house. Our results provide parental responses to generate information about what feeding styles (e.g. food purchase, eating together, model eating) and parents' perspective on child nutrition intake (e.g. what food is being offered, how often food is offered to child) are being used by parents' in the MSHS Latino farm-working community.

Summary

The nutrition history questionnaire used in this study provided parents' perspective on child nutrition intake. In terms of fruit and vegetable consumptions, parents across different weight status groups seemed to have them available for children. When comparing results to highly processed food consumption surprisingly parents with children in overweight category reported to rarely consuming fast food (N=105; 45%) while parents with obese weight children reported to some days consuming fast food (N=33; 49%). This study also provided information about child feeding style (Table 4.13). Parents with children in the overweight

(N=39; 71%) and obese (N=58; 58%) weight category responded to mostly allowing child to decide how much they eat.

Given the findings from this study, additional health training, such as nutrition education targeting MSHS children, families and staff is necessary. The data from the nutrition history questionnaire will aid in creating culturally appropriate programs and interventions to educate MSHS children and their parents about obesity prevention. For example, it will benefit all parents to help them understand the importance of the nutrition intake and learn how to use fresh/local food to prepare for their meals and reduce the processed food consumption based on the findings in this study.

Chapter V: Discussion and Conclusions

The purpose of this study is to analyze existing data on Latino MSFW parents of preschool children in MSHS Centers responses to nutrition history questionnaire, and child Body Mass Index (BMI) calculations. This study will examine (1) What do parents' perspectives of child nutrition intake look like in MSHS families, and (2) What are the child-feeding styles across the different weight categories. The results suggest that child-feeding styles practiced by parents have an effect on child's BMI.

In this study (32%) of the children were either overweight or obese. Results from current study point out the high prevalence of overweight and obesity is substantial among children from MSHS families. The finding is consistent with previous studies conducted by Maliszewski, Gillette, Brown, Cowden, (2017), and Rosado, Johnson, McGinnity, and Cuevas (2013), a higher percentage of the children were overweight or obese among Latino children in particular within a migrant farm working community. This study provides a similar number of the prevalence of overweight/obese children from other Latino studies. The results provide inspiration for future research to account for the unique circumstances of Latino MSFW families; many of which contend with poverty, lack of nutrition knowledge, and limited access to nutrient dense foods, frequent relocation, and acculturative stress.

Maliszewski, et al., (2017) found that previous research on parental child feeding style and child BMI in Latino parents is consistent under the dimensions of parental demandingness and responsiveness. Parents who reported practicing more demanding feeding styles tended to demonstrate a lower BMI in their children (Maliszewski, et.al, 2017). Several cross-sectional studies have suggested that the frequency of family meals is positively associated with consumption of healthier foods (Orrell-Valente, et al., 2006). Tschann, et al., (2015) found that parental feeding styles influence children's weight status in Mexican American families, and that children's weight status also influences parental feeding styles. The findings from the nutrition history questionnaire show that young children in Latino farmworker families have relatively fair diet quality. Among different child weight status groups, parents of children at the overweight status reported their children consumed more or double unhealthy food in comparison to children at the normal weight status. In general, looking at the individual components on this study, children in Latino

MSFW families have particularly low diet quality in four areas: vegetables, fiber, protein, and grains. The findings from the current study show that the diet quality appears to be high for fruits and dairy.

Strengths

Very few studies focus on the nutrition intake in Latino MSFW community in the United States. This is especially true for preschool-aged, Latino children and the influence on childhood obesity. The data in this study contributes to the literature as it concerns this demographic population. This study focuses on parent's perspectives on feeding young children during mealtime (child-feeding styles, and nutrition intake). Most prior studies had focused on Head Start providers and rarely included the parents. In this study, the emphasis was on what the families were consuming, and how they interact during mealtime, instead of focusing on the issue of food insecurity.

Limitations

Limitations of the study should also be noted. First of all, this project is based on the previous evaluation of *Muévete y CAMBIA tu Vida!* (*Muévete*) developed by Professor Brown. The instrument and data collection both were completed by a small group of research associates. Although the application of this project is limited, the results shed the light on MSHS parental feeding styles and their child's weight status. As mentioned earlier, the generalizability of the findings is limited to MSFW Latino Families enrolled in MSHS programs through Community Council of Idaho. The sample is not representative of all Latino families in the United States (US). Families with different ethnic and occupational backgrounds may differ in their feeding behaviors. Second, social desirability may likely influence the responses to the nutrition history questionnaire used in this study because parents might have wanted to portray themselves in a positive way. Lastly, there is no mechanism to check on the fidelity of data collection process.

Implications for Future Research

This study has begun to fill in the gap in the literature to better understand parental feeding styles reported by parents. By collaborating with Community Council of Idaho this study examined the nutritional and feeding practices of the Latino MSFW community in the

state of Idaho. Interviewing the community in their preferred language and using the nutrition history questionnaire, data results were obtained. What the family provides (feeding styles and nutrition intake) should not be downgraded, future studies should look at cultural practices and not make participants/families feel that the practices they are following are bad or incorrect. It is important to remember that sometimes participants/families cook and make meals with limited resources and time (food insecurity-what they have available, and what they can afford to make) as well as past teachings on how to cook or make food. Most prior studies have focused on childcare center staff but not parents. It would be important for future studies and research to focus more on getting information from the community and ask them what they want out of the study (what is the benefit for them). Future research should continue to examine relationships between parental feeding practices (i.e., feeding style and nutrition intake) factors and childhood obesity rates in the Latino Community. Developing a more thorough dietary recall protocol that extends to 72 hours to increase possible variability in diet intake is recommended. Observational studies conducted in participants home would also be important for future research to gain a better understanding of the dynamic interactions between parental feeding styles and child weight status.

Applications for Prevention Programs

It is important for children to thrive in school, students cannot thrive in school if they are not able to acquire the minimal dietary recommendations or even eat due to lack of nutritional knowledge, food insecurity, or lack of funds. Connecting MSHS families with professionals who identify themselves as members of the Latino community and can speak their language to help guide and answer questions is extremely important. Grande (2004) and Sherman (2003) found that the inclusion of diverse cultures and language in professional services (e.g., medical facilities) helps underserved communities. The addition of this material may help provide information for programming and planning of trainings for MSHS staff who work closely with their parents. This information can help these caregivers support their parents in regards to the child-feeding styles and nutrition practices they use with their children to encourage healthy eating (i.e., following the authoritative parenting style- where parents provide the food but child decides what and how much to eat). Prevention programs can also benefit from this research, specifically those that aim to prevent childhood obesity

and help parents understand effective feeding styles and nutrition intake. Prevention programs should focus on using combination of both observational measures and self-report to help address situational factors that can influence parental child-feeding. In addition, the results in this project could be used to create culturally appropriate trainings (i.e. nutrition education) that will benefit the community of Latino MSFW in Idaho. The ultimate goal is to help reduce childhood obesity rates among the Latino MSHS population. As parents and professionals work with children, it is important that we help children consume more whole foods and gain familiarity with variety of foods to form positive food habits (Quandt, et al., 2016).

Conclusion

The continuously increasing rates of overweight and obese children identified in the Latino population (Quandt, Grzywacz, Trejo, & Arcury, 2014), require furthering observation and cultural understanding of parental child-feeding styles and nutritional intake. More research on Latino communities is needed (Rosado, Bennett Johnson, McGinnity, & Cuevas, 2013). This study examined MSHS Latino parents' child-feeding style and nutrition intake to child BMI and provides support on why it is important to continue research in this community. It is important to aim to prevent childhood obesity and understand parental child-feeding styles and nutrition practices among MSFW.

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Appendix A - Community Council of Idaho Authorization

Community Council of Idaho

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December 6, 2018

To Whom it May Concern

We, the Community Council of Idaho, Migrant and Seasonal Head Start (MSHS), give authorization to University of Idaho, researcher Helen Brown to share MSHS nutrition assessment data she analyzed with Nallely Vega, to use for her thesis. The data is completely confidential as there are no identifiers for any of the participants completing the assessment. The results of Nallely's Vega will be used for educational purpose only. Nallely will analyze the accuracy of MSHS parent /guardian perception of the child's weight category with the actual weight category.

This analysis is important to determine if MSHS parents/guardians have an accurate perception of their child's weight category. This information is important to MSHS to continue our efforts to prevent and reduce childhood obesity.

We grant permission to conduct further analysis on this data. If you have any questions regarding this letter, please feel free to contact me at the below phone number.

Sincerely,

A handwritten signature in black ink that reads "Christopher J. Allen". The signature is written in a cursive style with a large, stylized initial "C".

Christopher J. Allen
Assistant Director
Community Council of Idaho-MSHS
Phone: (208) 453-3050

Appendix B- Nutrition History Focus Groups

Appendix C - Nutrition and Physical Activity Focus Groups- April 2015

To develop a revised nutrition and physical activity assessment, it was determined that information was needed from Head Start parents to shape cultural responsive assessment questions. Parents with children in two age groups, birth to three and three to five were recruited from two MSHS programs to participate in “feedback groups.” Consent forms were obtained and all participants were assured their responses were confidential. The hour-long focus group was conducted in Spanish. The interviews were recorded and translated into English. The focus group questions are below in bold, followed by common interview respondent themes.

Feedback Groups Ages 0-3

Q – What influences what you feed your child?

- Most parents (all mothers) stated positive factors that influenced what they fed their child.
- Most often stated was good nutrition to help their children grow and be healthy. As one mother stated, *“If they are eating well, growing well, and we can see that they look healthy.”*
- Food safety and sanitation was also cited.
- A few parents’ feeding choices were influenced by medical issues and physical activity levels.
- Child’s acceptance of food was a factor for some parents.
- Parents also stated that time was a factor and that weekends afforded them more time to prepare foods.

Q – What are some barriers to feeding your children?

- The most common barrier to feeding their child was lack of time and needed to work. *“I’m working and have also seen the health of my child suffer, so I’m going to stop working in order to make sure she’s healthy.”*
- Most mothers enjoyed cooking, but a few said not feeling like cooking was a barrier to feeding their child.
- Several mothers expressed a concern for what babysitters fed their children.

Q – Tell me about your experience breastfeeding?

- Overall, most mothers were positive about breastfeeding and associated breast feeding with healthy babies and felt it was better than formula. *“It’s very different the breast and the bottle. With breastfeeding, everything is fine. But with formula, all kinds of things happen...”*
- Mothers spent more time talking about the benefits of breastfeeding over their experience of breastfeeding. Identified breastfeeding benefits included: healthier babies, greater emotional connection with the baby, breastmilk was believed to increase intelligence, etc. *“For me, breastfeeding meant my child didn’t get sick as much.”*
- Mothers identified WIC as an important source of breastfeeding information.
- The most common breastfeeding barriers identified included: not having enough milk, inadequate education on how and why to breastfeed, going back to work, engorgement and other medical problems preventing milk production.
- Mothers had varying views on formula feeding depending on their experience. One mother stated, *“It is hard to find the right one that doesn’t cause cramping,”* while another mother said she felt

formula feeding helped her ensure that her child was adequately nourished and a few stated they chose formula for medical reasons.

- The group did not universally believe that breastfeeding was the best option: *“I have a different opinion. My child couldn’t latch. I was too young. One child breastfed and was good. One baby was formula fed and has not had problems. My last baby has epilepsy, is developmentally behind and was breastfed. I think it depends on each family when they say that breast milk is best.”*

Q – Tell me about how your baby takes a bottle? Tell me about the transition from breast to bottle and off the bottle.

- Transitioning from breast to bottle was difficult for some mothers, they reported their children were “fussy.” Other mothers reported the transition from breast to bottle was easier when their child showed “signs of being ready.”
- Most mothers seemed to understand the importance of transitioning off the bottle by 12 months and discussed the risk of tooth decay with extended bottle use and sleeping with a bottle.
- There was general agreement that transitioning from the bottle to cup was easier if done by one year.
- Despite mothers’ knowledge of proper time to wean from a bottle and bottle use, some mothers stated they gave bottles to “soothe children” and that they put juice, cow’s milk and cereal in bottles.

Q – Tell me about when your child first starting eating solid foods. How did you know to start?

- Most mothers reported starting food at 6 months, and most said they were educated about when to start solid foods from the WIC program.
- A few mothers who started solids early (3 months) did so because they felt that child wanted to start eating.

Q – Who do you look to for nutrition information?

- WIC was an often-reported source of nutrition information along with doctors and the Head Start program.
- Mothers discussed that nutrition information is confusing. *“It’s hard when you’re not educated very well. Hard to know what’s healthy or not. The school [Head Start] helped me learn how to cook veggies without fat, whole grains, and make these changes.”*
- Mothers also shared they were not accustomed to some healthy foods. *“If you’re not accustomed to eating whole grains or have never used whole grains, it’s hard to start. But at the school [Head Start] they only have whole wheat so I try to have that at home.”*

Q – What do you do to encourage your children to eat healthy foods?

- Mothers stated many positive methods for encouraging healthy foods including modeling, repeated exposure, feeding children the same food as the adults in the family, trying new foods and eating as a family. *“If kids eat by themselves they don’t eat well. They like to eat with you.”*
- Some mothers discussed following their child’s cues. *“I think the children give a message themselves. Even if they can’t talk, like a baby. They’ll let you know.”*
- Some less positive ways to encourage eating included: pressuring, requiring, children to eat, restricting foods, playing with the children and food at meal time, hiding healthy food with food coloring or changing food’s shape,

- The answers to this question were mixed, some mothers stated the children decide, other stated the parents and some stated both decide. Some parents restrict physical activity if the child has not tried each type of food offered.

"Some kids don't know how much to eat. One of my kids eats all kinds of veggies at head start, but in my house, he doesn't want to. Sometimes I tell them they can't play basketball until they eat their vegetables. Also, it's important that they get the right portions. I've seen it on television that they need the right portions. So they can have a little bit, but they must eat from everything."

Q – How do you decide what to offer as a snack? (Asked at one site only)

- Most mothers preferred to offer healthy snacks and send them to day care and to the babysitters. The respondents didn't clarify what a healthy snack meant to them.
- Some mothers believed that children mostly want sweets so they must give them healthier options.

Q – What more do you want to know about with feeding your children?

There were four main categories of information that women most wanted to know:

- Which foods and nutrients are considered healthy and will contribute to their child's health.
- What are age-appropriate portion sizes and what are the portion sizes of commonly eaten food.
- How to offer healthy food to children so they will eat it.
- Healthfulness of cultural food practices and portion sizes of commonly consumed traditional foods.

Q – If you could state one thing that influences the foods you prepare at home, what would that be?

- The most common response was time, followed by cost of food. Mothers reported difficult work schedules and that the cheapest foods were not the healthiest.
"When you're working, it is soda or juice from the store. And when you're not working, it's natural water with fruit."
- Cultural food practices and considerations were important. *"Our background. Moms, grandmas, how they taught you. If all you see is fat or white bread and pasta, that's what your cook. Culture is a big influence."*
- Food preferences of spouses and children were also reported.
- Nutritional value of food was important but the healthier food was considered more costly.

Q – What are your biggest worries about feeding your child?

- Mothers reported several worries: healthy weights, getting children to eat health food, keeping children well, and not knowing or understanding proper nutrition information. *"My biggest worry is having my children eat healthy, eating foods that make them feel good."*
- While mothers had worries, many stated they were taking proactive steps:
"I'm worried she'll do the same thing I did, like reject vegetables. Reject all that. But I'm trying to change so I can be an influence to her....Right now I'm trying to eat healthier and change how I eat so I can be a better example."

Q – What do you think about how much physical activity your family and your kids less than 3 get?

- Mothers had various views and most felt that their children were more active than they are. *“Sometimes I think enough is enough for me, but I see that my kids need more. Sometimes I’m embarrassed that I don’t have enough time to get them to be as active as I want. After work, I’m tired, I want a break, so I tell my kids to watch to TV or go play by themselves so I can get a break.”*
- Other mothers felt that their children preferred more sedentary activities (watching TV, playing on their phones) than actively playing.
- Some mothers reported *“forcing their children to go outside”* while other mothers said it was either unsafe outdoors or they didn’t know where to go to be active outdoors.

Q – What do you think about how much television your children watch?

- Many mothers stated their children watch too much television and especially during the harvest season. *“It is hard to play with them when you work so much.”*
- Mothers stated younger children were influenced by older children who watch too much television.

Q – Why is it difficult to get physical activity?

Mothers’ responses to the physical activity question fell into four categories:

- Inadequate and/or unsafe space around their residences for activity.
- Knowledge, attitudes and beliefs: Mothers reported lack of knowledge about where to go for physical activity (space and structured activities) and lack of clarity about what type of exercise is important. *“Your mind gets stuck on what to do, like we don’t know what to do for exercise.”* Mothers also reported beliefs that exercise added to fatigue from working: *“The belief that exercise makes you tired. But I learned that doing some yoga or something after I got home from working in the dairy helped me relax more and gave me more energy.”*
- Lack of time and fatigue from working so much.
- Weather- heat in summer and cold in the winter.

Cost of physical activity was mentioned but it was not cited as the barrier that healthy food was.

Themes from Feedback Groups Ages 3-5

Most of the mothers participating in the 3-5 age feedback group were new respondents, there were a few mothers who participate in both groups. The questions asked of the ages 3-5 children focused more on eating and physical activity behaviors and assumed that this age of child was not breast or bottle feeding.

Q – What influences your decisions to feed your children? (Asked at one site, not both)

The primary feeding decision influence for most mothers included:

- Selecting healthy foods.
- Serving what children will eat.
- Medical problems and the health of the children.
- Work and the impact of time on cooking. *“The health of my children. I only feed them soda once a week. And I only make one meal for everyone. I don’t make anyone anything specific. Everyone has to eat the same thing.”*

The concern most mothers expressed about what they prepared and fed their children was not always consistent with the dietary choices they made for themselves. *"I'm really strict with my children about what they are eating but I'm not with myself. With them yes, and with me, no."*

Q – Who do you look to for nutrition information?

- Mothers stated a variety of sources for nutrition information including: pediatricians, WIC, Head Start, other mothers and their own information seeking on-line and in pamphlets.
- Some mothers look to television for nutrition information.
- Although WIC was an important source of information, a few mothers mentioned that WIC did not supply them with all the information they needed.

Q – How do you encourage your children to eat?

- Mothers stated many positive methods for encouraging healthy foods including: allowing children to serve and feed themselves, modeling, understanding and knowing their child's unique needs and only helping their child as needed, and telling children about the importance of healthy food and drinking water.
- Some less positive ways to encourage eating included calling attention to the food they think their child should eat, changing the shape of food, or hiding it to increase acceptance of the food.

Q – Who decides how much to eat?

- The answers to this question were mixed, some mothers stated the children decide, other stated the parents and some stated both decide.
- The age of the child was mentioned as a factor in this decision.
- Most mothers agreed that children could ask for more food if they were still hungry.
- A discussion ensued that allowing children to decide how much to eat was quite different than their experience growing up as they were forced to finish their food. *"My parents made us eat with force. They hit us if we didn't eat. And this is different in my house, if the children are full they are full."*
- Mothers rely on advice from their pediatrician about how much their children should eat. *"I heard from my pediatrician that the more you eat the bigger... your stomach gets bigger. So when I tried to give less food to my daughter, she was used to eating more food and was always hungry."*
- Many mothers expressed concern about knowing how much their children needs to eat and were unclear about the eating decision process. *"I don't know if this is bad, but I think they decide."*

Q – How do you decide what to offer as a snack?

- Mothers' comments about snack decisions were mixed, some mothers stated their children decides what to eat, other mothers offer healthy snacks only (fruits and cereals were mentioned), and some mothers mix healthy snacks with less nutritious offerings. *"I feel like as long as they are eating a little of everything then some chips on some days aren't so bad."*
- Most mothers agreed that snacks were important because children are growing and some stated it was hard to know if snacks were needed because they were not sure what their child had eaten at school.
- Mothers stated that snacks out of the home were most problematic, and some relied on convenience foods, hamburgers, pizzas, etc. when out of the home.

Q – If you had to state one thing that influences what foods you prepare at home, what would that be?

- The most common response was lack of time due to work schedules, followed by cost of food. Mothers reported it was very hard to prepare healthy meals while working and that the healthier food was expensive and hard to obtain. *“We don’t have sufficient money to buy all the foods that are healthy.”*
- Mothers discussed the role of culture as influencing the food they prepared and specifically mentioned the use of fat and salt. *“Our culture is really accustomed to using a lot of fat. Everything with oil or fried.”*
- Spouse food likes and dislikes were mentioned.
- Seasonality influenced what was served (soup in winter) and access to food.
- One mother linked influences of food to physical activity. *“Sometimes it’s the food that makes children more active or more sedentary. If they eat better food, they might want to do more activity.”*

Q – What are your biggest worries about feeding your child?

Several worries about feeding their children fell into four main areas:

- Ability to provide children healthy food (factors of both time and cost).
- Knowledge, skills and information to serve children balanced and healthy meals.
- Fear that children will not eat the food that is prepared and wasting food.
- Concerns for their child’s weight and feeding their child too much.

Q – What do you want to know more about with nutrition?

Mothers expressed interest in three primary areas:

- Better understanding of nutrition information (nutrients mentioned several times) and where to obtain accurate information.
- Increasing skills and confidence to provide and prepare healthy food.
- Improving knowledge and skills on healthy childhood feeding practices and preparing food in a manner that children accept. *“I feel like at home if I buy vegetables my kids won’t eat them. But I see that they eat vegetables at school. I don’t know what the difference is.”*
“Like Americans, they have their way of eating. They have all the vegetables that they eat and they make them in ways that they like. At the school, they make vegetables and the kids eat them.”

Q – Why is it easy or difficult to do physical activity with your children?

Mothers’ responses to the physical activity question fell into four categories:

- Inadequate and/or unsafe space around their residences for activity.
- Knowledge, attitudes and beliefs: Mothers reported lack of knowledge about where to go for physical activity (space and structured activities) and lack of clarity about what type of exercise is important. Culture was also mentioned. *“There’s so many activities and everything they do here, and we don’t know what they do. Hispanics don’t do these things so we need to know how to do it.”*
- Motivation was also noted. *“They’re lazy. I don’t know if it’s the heat or what, but they are lazy.”*

- Lack of time and fatigue from working so much. One mother not working outside the home stated, *"I think it depends on how much interest you take in your kids. I don't work so I have more time to pay attention to them."*
- Weather- heat in summer and cold in the winter.

Q – What do you think about the quantity of television or cell phone or computer time your children get?

- Overall, most mothers agreed that that children had too much screen time and felt that it is hard to control when young children are around older siblings. Most seemed to have heard the importance of limiting screen time.
- Some mothers stated that TV was used as a way for them to relax or distract their children.
- Lack of ideas for other things to do was also a common response. *"During winter, there's nothing else to do, so my little girl watches a lot. But not so much now. I try to get her to play with her toys. But I think a couple hours of TV a day isn't bad, but no more than 2 hours during the whole day."*
- TV was also used to learn English.

Nutrition, Migrant and Seasonal Head Start (MSHS) Staff Focus Group Responses

Feeding Behavior and Physical Activity

Background

A focus group of Migrant and Seasonal Health (MSHS) teachers, case managers, health advocates and was held in April 2015 to for two primary purposes: 1) to inform the revision of the MSHS nutrition and physical activity assessment and 2) gain insight into current MSHS healthy eating and physical activity practices to prevent obesity and diabetes among MSHS children and their families. The focus group questions and responses are summarized, and quotations are included to highlight common themes.

Think about the nutrition needs or issues of the children here at the center. What comes to mind?

The most common responses included:

- A concern children are not receiving balanced meals outside of MSHS. Staff felt that meals at babysitters were not balanced and that children do not receive a variety of foods at home.
 - *"Parents need more education about how to feed their children; we never see veggies, beans and rice only."*
 - *"Hispanics eat certain foods, they'll say no to ones they do not know."*
- Limited food intake due to lack of acceptance of a variety of foods was a concern. *"Some children drink milk and eat fruit, nothing else."*

What comes to mind about the eating habits or patterns of the families who come here to the center?

- The majority of staff discussed the impact that long work hours, 10-12 hour shifts, 7 days a week, had on food purchases, preparation, and consumption and family meal practices.
 - *"Families eat fast foods – on the go – no time to prepare meals as they are working all the time."*
 - *"The young families, cereal, milk and sandwiches is all they prepare for kids."*
- Food insecurity, lack of education and dependence on fast, cheap and easy food was discussed. Staff voiced concern that children were not having family style meals at home.

What concerns do you have about the families and children having enough nutritious food to eat at home?

The staff had a robust conversation about the question of families and children having enough nutrition food. Five major themes emerged:

- **Lack of knowledge-** staff stated parents did not provide enough nutritious food because they lack nutrition understanding and the role healthy eating plays in their child's health. Providing healthy snacks at home and at the childcare was also a concern, *"Parents don't understand that kids need a snack or dinner in the evening."*
- **Lack of food access, storage and cooking skills and equipment/facilities-** Staff discussed the mobility of families, and that many live in labor camps with inadequate, damaged or missing refrigerators, stoves, etc. which greatly limits ability to prepare healthier food. *"If a family doesn't have a fridge or stove, they buy bologna and things that are quick to prepare with no cooking involved."*

- **Food bank concerns-** Many concerns were voiced including: lack of variety of foods offered for balanced meals; unfamiliar foods and when recipes are not included with the food, they are also unfamiliar to MSHS families; food given does not last longer than a week and families are limited to once a month food distribution; food boxes come without instructions (or in Spanish).
"Food boxes come without instructions and the food will end up just sitting there if they don't understand how to prepare it. For example, powdered milk- they don't know what it is so they don't use it. Some people can't read the labels."
- **Food resources go underused/unused:** Staff discussed large potato processors willing to donate potatoes and stated that families did not have the means to collect and store the potatoes or the time. Staff felt parents lack knowledge of resources available to them.
- **Lack of access to nutritious food and adequate calories** seemed evident to staff based on children's behaviors at MSHS. *"Some kids arrive at the center already waiting for the food to come- they want more and more, eating really fast so they can get more than other children."*
- Many felt that the 2 pm meal at MSHS was the last meal of the day for some children and that their babysitters didn't feed them. *"They come in the morning and are starving."*

How do you encourage the children to try a variety of foods?

Staff had mixed views about encouraging children to try a variety of foods.

- **Modeling-** *"We taste it ourselves and explain what it is, 'Oh, this is really good!'"*
- **Expectations to try food-** *"You have to taste it first before you say you don't like it. Always try it, 50% of the time they like it."*
- **Names of food-** *"Calling broccoli little trees."*
- **Discussing the nutritional value of the food-** *"This milk will give you stronger bones, teeth. Make them aware of the benefits of different foods."*
- **Connecting food to food origins**
 - *"Talk about where their food comes from. They take field trips to the dairy and other places."*
 - *"We garden outside and talk about the food that comes from the garden. We begin with seeds and the kids do the whole cycle."*
- **Consequences-** *"Eat this or else you will be hungry cause we're going outside next."*

Tell us about you feel about talking with children and families about healthy eating?

- Staff finding the MSHS menu and cook helpful as springboards to discuss healthy eating. *"If a child really likes what the cook made then we can share the recipes and ideas with the parents."*
- Staff talked about providing nutrition activities in the classroom and was desirous of more cultural nutrition education and information. *"It would be good to learn more about the nutrition of their cultural foods like beans and rice."*
- Staff is interested in providing more education for families but expresses concern about finding a time that works for busy parents such as evenings or weekends.
- Staff believed that incentives such as kitchen utensils were important to incentivize education and to increase food preparation capacity and skills.
- Home visits provide an important vehicle for healthy eating education and more training and nutrition education resources were identified needs.

How do you like to learn about nutrition and what would you like to learn?

MSSH staff was asked this question to better understand how to best provide useful nutrition information in a format that is most relatable and desirable.

Learning about nutrition- Staff expressed five key areas of desired nutrition information:

- **Nutrition facts label-** Overall, staff felt that food labels were “super confusing” and they wanted to understand labels and have an easy way to share the nutrition facts with families. *“I want to be able to really read what is said on the box- about nutrition and foods that people should stay away from...”*
- **Nutrition and diabetes-** Staff understands that people who are at risk for diabetes should avoid sugar and feel the amount of sugar in drinks is important to share with MSSH families. They stated confusion about carbohydrates and understanding what is important to prevent and control diabetes for MSSH families and for themselves. *“What effect pasta has and other foods that can hurt you. Not just for the parents – also for ourselves.”*
- **Balanced food/nutrition intake - Staff reported many concerns for MSSH families and for themselves to understand nutrition.** *“It would be nice to have an updated list about what is good or bad for you (i.e., good eggs, bad eggs).”* They also expressed concern to help families eat more fruit and vegetables and have a more balanced diet. Many had questions about appropriate calories for different ages and activity levels and wondered if counting calories was needed, *“Counting calories wouldn’t be easy for busy families.”* Understanding the relationship between calories and nutrition was a shared concern, *“Some things say that they are low calorie, but have 20 g of carbs – this is hard to figure out.”*
- **Portion and serving sizes-** There was shared confusion about appropriate portion/serving sizes for MSSH children, families and themselves. Staff expressed a desire to better understand appropriate serving sizes and the relationship between adequate nutrients. *“A friend has 7 small meals a day, and exercises and is very fit.”* One staff member is starving when arriving home after having just a little lunch and a big breakfast. *“It would be good to know more about managing meals.”*
- **Nutrition and health-** Overall, staff wanted a better understanding of what it means to be healthy. *“What is healthy? Different people define healthy in different ways; it would be good to know what is appropriate.”* Staff shared concerns about their weight status, diabetes prevention, and future health status.

Learning about nutrition

- Staff talked about learning preferences for themselves and MSSH families. Staff was interested in hands on learning, getting accurate information from the internet, and talking about it with staff and their families.
- Staff desired hands on, visual and low literacy nutrition information to share and talk about with families.

How do you feel about how well the food served at MSSH meets nutritional and cultural needs of the children?

Staff believed that food served at MSSH was well-balanced, wholesome, and that mealtimes promoted enjoyable healthy eating. Two primary cultural food concerns emerged:

- More cultural food selections are needed to improve food intake, reduce waste, and to respect and honor cultural food practices.
 - *“Ham and cheese goes in the garbage, hummus too. They just eat the crackers.”*
 - *“It would be nice to have more cultural related foods incorporated in the menu. The kids try things but don’t like it. If it relates to their culture and background they would be more likely to eat it.”*
 - *“We have the parents teaching them the Hispanic way vs. the Center teaching them the American way. It’s what they are used to. Many foods are totally different than what they get at home and they eat the food like milk and fruit they are used to.”*
- Make cultural food options in a healthy way- Staff felt that teaching families to eat good food like beans and rice in a healthier way (without the fat for example) and adding vegetables was important.

How MSHS does supports mothers who are breastfeeding and or pumping milk for their babies. What works well? What could be better?

- **Working well-** Staff shared several ways that MSHS supports breastfeeding mothers well, including: providing proper storage for breastmilk; space to breastfeed; encouragement to bring breastmilk to the Centers; policy and procedures for proper documentation of breastmilk and providing coolers to transport milk to the childcare and/or home.
- **Areas for improvement-** Several ideas were discussed included offering high quality breast pumps on site; more coordination with the WIC program for training and breastfeeding resources, training and education on important concerns such as risk of pesticide exposure and breastfeeding; better access to privacy if breastfeeding at the Centers. It was not clear that all Centers complied with the new law requiring employers of over 50 employees to provide lactation accommodations.
- **Training needs-** Staff varied in their comfort level providing breastfeeding support and information to parents. They discussed the importance of clear, accurate, and consistent information. Staff discussed sharing information with mothers that they had received or researched. Staff believed that teachers would benefit from additional training, particularly the infant classroom teachers.
- **Education needs of MSHS families-** Staff felt that mothers would benefit from on-line or telephone support in their preferred language (not always Spanish), and they needed additional education over time.
- **Lower breastfeeding duration-** Staff attributed shorter duration among Hispanics in Idaho to long work hours and lack of knowledge and support,
 - *“Mothers need to know it is ok to breastfeed over 12 months.”*
 - *“Mothers don’t have the education to know what to do [about breastfeeding]. Also they don’t have their families all here to learn from. Some are back in Mexico.”*
- **Fathers and breastfeeding-** Staff felt they were trying to reach out to fathers. *“We talk about breastfeeding. We encourage the dads to come in and not just stay in the parking lot. They have had to learn to come in and engage.”*

What do you think would create an even healthier eating environment at The Center? How could the community support healthier eating?

The staff discussion centered around four main areas:

- **Increasing the amount and variety of foods offered-** Some were concerned that children did not have enough to eat. Staff also discussed making meal time more ‘fun’ and enjoyable.

- **More culturally accepted food prepared in a healthy way-** Some staff felt that children need to have culturally accepted food available more often to ensure they eat at mealtime.
- **Creating more healthy food skill building opportunities-** Staff discussed the need for cooking, canning, and food skill-building classes and the need for commercial kitchens.
 - *"Bring some training to parents like cooking in the center – the cook can show you different recipes and complement our presentation with the parents."*
 - *"Families need to know how to can food, the skill has been lost."*
- **Building partnerships to increase healthy food access** by growing food onsite and partnering with farmers and local food banks. Increasing access to the Farmers Market was discussed as an important source of healthy food.
 - *"We could have a garden for parents too, farmers could come and help us at the Center."*
 - *"A greenhouse for the families would provide food longer into the growing season. We could send food home with families."*

Physical Activity (PA) Questions

In what ways are the children physically active on a typical day at MSHS? How intense is their activity?

Staff primarily discussed particular PA that children participated in during class time such as dancing, racing, playing on the playground, etc. Key considerations included:

- **Space-** Staff voiced concerns about space in the winter months and felt the space provided was too small.
- **Teacher engaged with PA-** Staff shared different levels of PA engagement with children. Most agreed that it was important to increase interest in and intensity of PA. *"For older kids, teachers are exercising with the kids to get them going."*

What do you want the children to experience from physical activity?

- **Enjoyment of PA-** Staff was in agreement that they wanted children to know that PA is fun, part of daily life, and to enjoy activity as they did when they were young. They expressed concern that children were less active due to working families, unsafe conditions, and excess screen time.
 - *"During our childhood I was 12 hours a day outside, running and playing. Things have changed so much. Parents don't feel like that is safe anymore."*
 - *"We need to create more PA activities that are new and fun and rotate activities so kids are looking forward to them."*

What kinds of activities do the children choose to do when they have free play?

- **Active time:** Staff named a wide variety of free time PA including: jungle gym, sand box playing, running games, tag, jumping, and treasure hunting with physical activity for the instructions to find the next clue.
- **Sedentary free time-** Staff stated that children like to pretend to cook, clean, play blocks, Legos, etc.

What are some things that may make it hard for children to participate in physical activity here at the Center?

Staff discussed physical activity issues in four major areas:

- **Space-** Limited indoor and outdoor space and equipment limits activity.
- **Safety-** Issues such as tree limbs that need removal, limit outdoor play time.

- **Weather-** Staff voiced concerns about extreme weather conditions, cold, heat, and wind as all limiting outdoor PA. Staff stated some Centers have more shade than others.
 - *"We can't escape the heat in the summer – we had to keep them inside. In the winter it is too cold."*
 - *"We have to play musical chairs at the end of the day to keep kids in the shade. We have to go to the side of the side of the building to avoid playing in the heat."*

How comfortable are you engaging the children in physical activity? What would help make you more comfortable?

Staff discussed varied levels of comfort and experience engaging in PA. They also discussed other obstacles to PA for themselves and for MSHS children. They were most interested in talking about strategies to increase PA among families.

- **Comfortable with PA-** Some teachers said they were very comfortable playing anything, soccer, ball games, etc., but would like to see teachers in all Centers working together to share what they know about effective PA strategies.
- **Increase comfort-** Staff said they could be more active with children, they stated they "hadn't thought about it much."
- **Increasing PA of MSHS families-** Staff was interested in increasing PA through family PA activities (e.g., biking) and stated that families needed access to bikes. Family Field Days were offered as one idea for increasing staff and family PA.

What questions do you have regarding the physical activity recommendations for children?

Staff were interested in talking about the relationship between nutrition and PA. Many stated that they believe parents don't offer enough vegetables and that they encourage children to eat too much because they do not understand proper portions. They also felt that pizza, burgers, etc. are becoming part of the food culture of families, and they need help understanding the risk of these foods. They were more interested in talking barriers to PA and ideas to promote PA.

- **Questions about PA-** Staff want to know which PA is most beneficial and how long children need to be active. They would like a list of activities they can share with parents.
- **Concerns and barriers about PA-** Staff relate the outdoor conditions are unsafe for many MSHS children due to traffic, unsafe neighborhoods, etc. Families lack time and the means for PA (e.g., lack of bicycles) and play space is limited. Scholarships are needed for free or reduced summer pool passes.
- **Suggestions to improve PA-** Staff suggested partnering with the YMCA for discounts for programs and access to the pool.

What are some common questions families have about physical activity?

The most common questions relate to PA resources and access and also PA for children with disabilities.

- **Location of parks-** Staff feels families need more information on parks and ideas for outside activities.
- **Children with disabilities-** Staff feels they need to be a resource for children with disabilities and they are limited because they do not have the equipment they need at the Center to help children

be active. They stated local parks lack needed equipment (e.g., given was adapted swings) for children with disabilities.

What do you think the center needs to promote an even more physically active environment?

Staff discussed many examples of PA promotion at MSHS facilities including: Zumba and aerobics classes, activity resources, parent information promoting games and activities, etc. Staff suggested working with partners to apply for grants for gardens, bike paths, walking paths, picnic areas, etc. to improve community wellness.

Appendix C- Nutrition History Questionnaires and Guidance

Community Council of Idaho Inc., Migrant and Seasonal Head Start

Nutrition History for Children 3-5 Years of Age

The following questions will help us provide the best nutritional care for [CHILD'S NAME] and provide your family with nutrition information and resources. I am going to ask you some general questions about what [CHILD'S NAME] drinks and eats, and his/her feeding behaviors and physical activity

1. Does [CHILD'S NAME] have a diagnosed food allergy or food intolerance?
 YES NO
 Type of Allergy_____ - *If YES, fill out the Child Diet Plan Medical Statement.*
2. Does [CHILD'S NAME] have other medical or special dietary needs?
 YES NO
 Describe need_____ - *If YES, fill out the Child Diet Plan Medical Statement.*
3. Does [CHILD'S Name] have any special food needs based on cultural, religious, ethnic, or personal food preferences?
 YES NO - *If YES, please fill out the Food Preference Request Form.*

The following questions are about [CHILD'S NAME]'s drinking and eating patterns

4. What type of milk does [CHILD'S NAME] drink most of the time? *Check all that apply.*
 - Cow's milk- If YES to cow's milk, which type?
 Whole 2% 1% Skim
 - Flavored Milk
 - NIDO or other powdered milk beverages
 - Other milk types (soy, rice, almond, goat, etc.) Please describe_____
5. Which of the following does [CHILD'S NAME] use to drink? *Check all that apply*
 - Bottle
 - Sippy cup
 - Regular cup
 - Adaptive cup, Please describe_____
6. Does [CHILD'S NAME] feed themselves independently? *Check one.*
 - All the time Sometimes Never
7. Which of the following does [CHILD'S NAME] use to eat? *Check all that apply.*
 - Fingers
 - Spoon
 - Fork
 - Adaptive utensils, Please describe_____

8. Which sweet of the following beverages does [CHILD'S NAME] drink? *Check all that apply.*
- 100% juice Kool-Aid/Fruit Drinks/punch Energy/Sports Drinks Soda
 Maizena Avena Agua Fresca Other_____
9. How often does [CHILD'S NAME] drink beverages with added sugar? *Check one.*
- More than once a day
 Most days
 Some days
 Rarely or never
10. How many meals does [CHILD'S NAME] eat each day?
- 1 2 3 4 or more
11. How many snacks does [CHILD'S NAME] eat each day?
- 1 2 3 4 or more
12. How often does [CHILD'S NAME] eat the following foods: *Check one.*
- | | | | |
|--|------------------------------------|------------------------------------|---------------------------------|
| Hot and cold cereals | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Bread and tortillas | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Rice and pasta | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Fruits | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Vegetables | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Beans/legumes | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Cheese/yogurt | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Meat/poultry/fish | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Hot dogs/processed meats | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Candy/cookies/cake/pan dulce/ice cream | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Fast food/pizza | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
| Chips/salty snacks | <input type="checkbox"/> Most days | <input type="checkbox"/> Some days | <input type="checkbox"/> Rarely |
13. How often does [CHILD'S NAME] eat whole grain bread, tortillas, pasta, or brown rice? *Check one.*
- Most days Some days Rarely
14. How often does [CHILD'S NAME] eat foods prepared with lard? *Check one.*
- Most days Some days Rarely
15. Does [CHILD'S NAME] eat anything that is not food? (Dirt, clay, paper, etc.)
- YES NO If YES, please describe _____
16. Are you confident, somewhat confident, or not confident knowing which foods to avoid giving to [CHILD'S NAME] to protect him/her from choking and other hazards? *Check one.*
- Confident
 Somewhat confident
 Not confident

17. Please respond to the following statements- are they mostly, sometimes, or rarely true? *Check one.*

- My child is allowed to decide how much they eat. Mostly Sometimes Rarely
 Adults in the house decide what foods are purchased. Mostly Sometimes Rarely
 Our family eats meals together. Mostly Sometimes Rarely
 My child sees me eat fruits and vegetables. Mostly Sometimes Rarely
 I offer a variety of fruits and vegetable in my house. Mostly Sometimes Rarely
 I keep fruits and vegetables ready to eat in my house. Mostly Sometimes Rarely
 A TV is on when my child eats. Mostly Sometimes Rarely
 If my child does not eat enough, I ask him/her to eat more. Mostly Sometimes Rarely
 I give my child a reward for eating food. Mostly Sometimes Rarely

The next questions are about physical activity.

18. Does [CHILD'S NAME] have an impairment or health problem that limits his/her ability to walk, run, or play?

YES - If YES, please describe

NO

19. On an average day, about how much time does [CHILD'S NAME] spend watching TV, smart phones, computers, video games, or tablets? *Check one.*

0 hours

½ hour

1 hour

2 hours

Over 2 hours

20. On an average, how often does [CHILD'S NAME] get at least two hours of active play throughout the day? (Running, jumping, hopping, climbing, etc.) *Check one.*

Most days Some days Rarely

21. During a typical week, how often does [CHILD'S NAME] see you doing, or going to do, something that is physically active? *Check one.*

Most days Some days Rarely

22. During the past week, how many days did you or any family member take [CHILD'S NAME] out for active play (home yards, parks, playground, or indoor recreation centers)? _____ days per week

The last questions are about any concerns you may have.

23. Do you have any concerns or questions about [CHILD'S NAME]'s appetite or food intake?
 YES If YES, please describe _____
 NO
24. Do you have any concerns about [CHILD'S NAME]'s growth or weight?
 YES NO
If YES, please describe _____
25. Do you consider [CHILD'S NAME] to be: *Check one.*
 Overweight
 Underweight
 About the right weight
 Don't know
26. Is there anything else you would like to tell me about [CHILD'S NAME]'s eating or activity?
 YES NO
If YES, please describe _____

Thank for your completing this questionnaire!

Community Council of Idaho Inc., Migrant and Seasonal Head Start

Nutrition History for Children 3-5 Years of Age

The following questions will help us provide the best nutritional care for [CHILD'S NAME] and provide your family with nutrition information and resources. I am going to ask you some general questions about what [CHILD'S NAME] drinks and eats, and his/her feeding behaviors and physical activity

1. Does [CHILD'S NAME] have a diagnosed food allergy or food intolerance?

YES NO

Type of Allergy_____ - *If YES, fill out the Child Diet Plan Medical Statement.*

Guidance - Communicate special dietary needs to the case manager and food service director. Refer to the RD to make appropriate modifications to the meal pattern.

2. Does [CHILD'S NAME] have other medical or special dietary needs?

YES NO

Describe need_____ - *If YES, fill out the Child Diet Plan Medical Statement.*

Guidance - Communicate special dietary needs to the case manager and food service director. Refer to the RD to make appropriate modifications to the meal pattern.

3. Does [CHILD'S Name] have any special food needs based on cultural, religious, ethnic, or personal food preferences?

YES NO - *If YES, please fill out the Food Preference Request Form.*

Guidance - Communicate special dietary needs to the case manager and food service director. Refer to the RD to make appropriate modifications to the meal pattern.

The following questions are about [CHILD'S NAME]'s drinking and eating patterns

4. What type of milk does [CHILD'S NAME] drink most of the time? *Check all that apply.*

Cow's milk - If YES to cow's milk, which type?

Whole 2% 1% Skim

Flavored Milk

NIDO or other powdered milk beverages

Other milk types (soy, rice, almond, goat, etc.) Please describe_____

Guidance - After age two, 1% or skim milk is recommended. There is no reason to give whole milk. Unless recommended by a health care provider, NIDO, and other powdered milk beverages are not needed and are not recommended. If the child is drinking soy, rice and almond milk or goat milk, refer to the RD to ensure that the child is receiving all needed nutrients. Ensure that the cow's milk provided is pasteurized; drinking raw milk can cause serious illness.

5. Which of the following does [CHILD's NAME] use to drink? *Check all that apply*

- Bottle
- Sippy cup
- Regular cup
- Adaptive cup, Please describe_____

Guidance - Children should be weaned from a bottle around 12 months to protect the child's teeth, maintain a healthy weight, and avoid other health problems. Preschool aged children should use an open cup, not a sippy cup. Sippy cups are not necessary and may delay the development of a mature swallow pattern which may make chewing and swallowing food with more texture difficult. For pediatric dental care tips, see: www.aapd.org.

If an adaptive cup is needed, refer to the RD. If the child is using a bottle, share **Time for a Cup!**

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TimeForACupSpanish.pdf>

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TimeForACup.pdf>

6. Does [CHILD's NAME] feed themselves independently? *Check one.*

- All the time
- Sometimes
- Never

Guidance - Self-feeding is important for building fine motor skills and to develop socially. Independent feeding allows the child to respond to natural hunger and fullness cues. Encourage the caregiver to allow independent feeding. Preschoolers should be able to feed themselves independently and eat the healthful food in child-size portions foods that are served to the rest of the family.

7. Which of the following does [CHILD's NAME] use to eat? *Check all that apply.*

- Fingers
- Spoon
- Fork
- Adaptive utensils Please describe_____

Guidance - To encourage fine motor skills, encourage use of appropriate size spoons and forks for preschoolers. Assure caregivers that many children are 'messy' eaters at this time and to expect some

spills. Families may have cultural norms about using fingers and utensils. Find out what the caregiver expects the child to be able to do at this age. If adaptive utensils are needed, refer to the RD.

8. Which of the following sweet beverages does [CHILD'S NAME] drink? *Check all that apply.*
- 100% juice Kool-Aid/Fruit Drinks/punch Energy/Sports Drinks Soda
 Maizena Avena Agua Fresca Other _____

Guidance - For children of all ages, water and milk are the best beverage choices. Advise caregivers to limit 100% juice to 4 ounces a day served in an open cup. Encourage drinking water and to avoid sugar-sweetened beverages as they can cause tooth decay, contribute to obesity, and crowd out healthful food. Energy drinks and other caffeine containing beverages are not suitable for children.

9. How often does [CHILD'S NAME] drink beverages with added sugar? *Check one.*
- More than once a day
 Most days
 Some days
 Rarely or never

Guidance - If the caregiver answers "rarely or never," assure them they are making the best choice for their child's health. Encourage caregivers to avoid giving their child sugar-sweetened drinks and discuss the importance of offering fresh water several times a day.

10. How many meals does [CHILD'S NAME] eat each day?
- 1 2 3 4 or more

Guidance - Eating three meals and two or three healthful snacks a day is recommended. It is important to offer meals at predictable times each day. It is common for preschoolers' appetite to change some from day to day. If the caregiver is concerned that the child does not eat at mealtime, ask about the beverages and other snacks they eat. Encourage the parent to not push food on a child if they are not hungry and to not allow them to eat on demand throughout the day.

11. How many snacks does [CHILD'S NAME] eat each day?
- 1 2 3 4 or more

Guidance - Two or three healthy snacks a day are recommended. Discuss the need for healthful snacks at predictable times each day. Advise the caregiver to avoid offering less healthful snacks and allowing the child to eat on demand throughout the day.

12. How often does [CHILD's NAME] eat the following foods: *Check one.*

Hot and cold cereals	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Bread and tortillas	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Rice and pasta	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Fruits	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Vegetables	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Beans/legumes	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Cheese/yogurt	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Meat/poultry/fish	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Hot dogs/processed meats	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Candy/cookies/cake/pan dulce/ice cream	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Fast food/pizza	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely
Chips/salty snacks	<input type="checkbox"/> Most days	<input type="checkbox"/> Some days	<input type="checkbox"/> Rarely

Guidance - This questionnaire does not ask the specifics of what and how much the child ate, but rather if the child ate a variety of appropriate food high in nutrients on 'most days.' The best foods are whole, fresh, and unprocessed. Exposing children to a variety of healthful foods, including vegetables and fruits, helps children accept and learn to like these foods. Children often need repeated exposure to a new food before they will take a first bite. It is also important for parents to model eating a variety of healthful foods. Share age appropriate feeding guides. Assure the caregiver that it is normal for children's appetites to vary from day to day.

Review the age appropriate feeding guide to help the caregiver select healthful foods in age appropriate portion sizes.

I am Three

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-IAMThree.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-IAMThreeSpanish.pdf>

I am Four

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-IAMFour.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-IAMFourSpanish.pdf>

Identify if 'junk foods' - candy/cookies/cake, fast food/pizza, hot dogs/processed meats, and sugar sweetened beverages - are offered more often than "rarely." Advise that these types of foods do not

supply needed nutrients and can replace healthful food. Help families make healthier choices from fast food restaurants, such as splitting meals, eating fruit and salad instead of fries, and drinking water or juice instead of soda. Low fruit and vegetable intake and high intake of foods high in sugar, fat, and calories are associated with obesity. Children do not need much salt (sodium) and should limit salty foods or snacks. Refer to the RD as needed.

Educational Resources addressing snacks, healthier fast foods and other healthy eating tips.

Healthy Choices for Kids

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-HealthyChoicesforKids.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-HealthyChoicesforKidsSpanish.pdf>

Core Nutrition Messages Especially for Moms (available in English and Spanish) at

<https://www.fns.usda.gov/core-nutrition/especially-moms>

13. How often does [CHILD'S NAME] eat whole grain bread, tortillas, pasta or brown rice? *Check one.*
 Most days Some days Rarely

Guidance - Encourage caregivers to make half of the grains offered whole grains. Discuss the whole grain choices that their child will be fed at Head Start and encourage including these foods at home. Learn about whole grains at <https://www.choosemyplate.gov/> (English and Spanish).

14. How often does [CHILD'S NAME] eat foods prepared with lard? *Check one.*
 Most days Some days Rarely

Guidance - Children need the healthy fats that come from plant oils (e.g., olive, canola, and safflower) and nut butters. Fats that are solid at room temperature like lard, shortening, and butter can contribute to heart disease and fried foods are high in calories. Encourage use of oils over lard as well as baking and broiling instead of frying. Learn about healthy fats at <https://www.choosemyplate.gov>

15. Does [CHILD'S NAME] eat anything that is not food? (Dirt, clay, paper, etc.)
 YES NO If YES, please describe _____

Guidance - The eating of nonfood items is called pica. Young children may put nonfood items in their mouth on occasion. Eating nonfood items can lead to lead poisoning, intestinal blocking, iron deficiency anemia, and other health problems. If the parent/caregiver answers "yes," ask what is eaten, how much, and how often. Refer to a medical provider for frequent nonfood consumption. For more information see **Kids Health** - <http://kidshealth.org/en/parents/pica.html#>

16. Are you confident, somewhat confident, or not confident knowing which foods to avoid giving to [CHILD'S NAME] to protect him/her from choking and other hazards? *Check one.*
 Confident
 Somewhat confident
 Not confident

Guidance - If parent/caregivers say they are “confident” probe to see if they are aware of high risk foods. If they answer “somewhat confident” or “not confident” review hazardous foods with them. Choking foods to avoid include: hot dogs, nuts, seeds, popcorn, chips, grapes, raisins, raw vegetables, peanut butter, and hard candy.

17. Please respond to the following statements- are they mostly, sometimes or rarely true? *Check one.*

- | | | | |
|---|---------------------------------|------------------------------------|---------------------------------|
| My child is allowed to decide how much they eat. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| Adults in the house decide what foods are purchased. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| Our family eats meals together. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| My child sees me eat fruits and vegetables. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| I offer a variety of fruits and vegetable in my house. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| I keep fruits and vegetables ready to eat in my house. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| A TV is on when my child eats. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| If my child does not eat enough, I ask him/her to eat more. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |
| I give my child a reward for eating food. | <input type="checkbox"/> Mostly | <input type="checkbox"/> Sometimes | <input type="checkbox"/> Rarely |

Guidance - The first two statements relate to the division of responsibility of feeding young children. It is recommended that caregivers decide what variety of healthful foods to offer at mealtimes, and the child decides which of the foods to eat, how much to eat, and whether to eat at all. Eating together, modeling eating fruits and vegetables, and keeping a variety of fruits and vegetables in the house encourages children to eat a variety of healthful foods. Coaxing children to eat more, giving rewards for eating, or punishments for not eating can result in meal time struggles and can cause the child to become less sensitive to their own hunger and fullness cues. Eating with the TV on or other electronic gadgets reduces family conversation, takes the focus off the mealtime, and exposes the child to advertising for less nutritious food.

Educational resources:

Be a Healthy Role Model for Children

English - <https://choosemyplate-prod.azureedge.net/sites/default/files/tentips/DGTipsheet12BeAHealthyRoleModel.pdf>

Spanish - <https://choosemyplate-prod.azureedge.net/sites/default/files/tentips/DGTipsheet12BeAHealthyRoleModel-sp.pdf>

Tips for Happy Mealtimes

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TipsForHappyMealtimes.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TipsForHappyMealtimesSpanish.pdf>

Veggies are Yummy

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-VeggiesAreYummy.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-VeggiesAreYummySpanish.pdf>

The next questions are about physical activity.

18. Does [CHILD'S NAME] have an impairment or health problem that limits his/her ability to walk, run, or play?
- YES - If YES, please describe
- NO

Guidance - If the child's movement is impaired, refer to the case manager to work with therapists to find alternative forms of physical activity.

19. On an average day, about how much time does [CHILD'S NAME] spend watching TV, smart phones, computers, video games, or tablets? *Check one.*
- 0 hours
- ½ hour
- 1 hour
- 2 hours
- Over 2 hours

Guidance - Review the American Academy of Pediatrics (AAP) media recommendations: (See **Media and Young Minds**: <http://pediatrics.aappublications.org/content/early/2016/10/19/peds.2016-2591>)

- Children 2-5 years, limit screen use to 1 hours per day of high quality programs. Caregivers should co-view media with children and discuss content with them.
- Designate media-free times together (e.g., dinner or driving) and media-free locations at home e.g., bedrooms, dining area)
- Create a Media Use Plan- **HealthyChildren.org/MediaUsePlan**: <https://www.healthychildren.org/English/media/Pages/default.aspx> (also in Spanish)
- Limit parental and caregiver media use. Heavy parent media use reduces parent-child verbal and play interactions and models high media use as a norm.

20. On an average, how often does [CHILD'S NAME] get at least two hours of active play throughout the day? (Running, jumping, hopping, climbing, etc.) *Check one.*
- Most days Some days Rarely

Guidance - For children not engaging in at least two hours of active play daily, inquire about barriers that may restrict active playtime (lack of space and/or access to parks, safety, time, caregiver fatigue, etc.). Review the Active Start Physical Activity Guidelines for Preschoolers- 3-5 years of age.

- At least 60 minutes daily of structured physical activity
- At least 60 minutes and up to several hours per day of daily, unstructured physical activity
- No more than 60 minutes of sedentary behavior at a time except when sleeping.
- Both safe indoor and outdoor areas are needed for large muscle (e.g., legs) activities
- Resource - <http://journal.naeyc.org/btj/200605/NASPEGuidelinesBTJ.pdf>

21. During a typical week, how often does [CHILD'S NAME] see you doing, or going to do, something that is physically active? *Check one.*

- Most days Some days Rarely

Guidance - Encourage caregivers to model physical activity for their children. Discuss suggestions for enjoyable, safe, and accessible physical activity.

22. During the past week, how many days did you or any family member take [CHILD'S NAME] out for active play (home yards, parks, playground, or indoor recreation centers)? _____ days per week

Guidance - Daily structured and unstructured play in outdoor or large indoor areas are recommended. Discuss barriers caregivers face providing active play and refer to local resources.

The last questions are about any concerns you may have.

23. Do you have any concerns or questions about [CHILD'S NAME]'s appetite or food intake?

YES If YES, please describe _____

NO

Guidance - For an open-ended discussion, ask, "What concerns do you have about [CHILD'S NAME]'s eating habits?" Depending on the concerns stated, provide educational information. Assure the caregiver that young children may sometimes eat more or less than other times based on their growth and development and personal tastes. If the caregiver is concerned the child is a 'picky eater' refer to [Tips for Picky Eaters](#)

English - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TipsforPickyEaters.pdf>

Spanish - <https://archive.cdph.ca.gov/programs/wicworks/Documents/NE/WIC-NE-EdMaterials-TipsforPickyEatersSpanish.pdf>

Refer to the RD as needed.

24. Do you have any concerns about [CHILD'S NAME]'s growth or weight?

YES NO

If YES, please describe_____

Guidance - For an open-ended discussion, ask, "What concerns do you have about [CHILD'S NAME]'s growth or weight?" Allow the parent to express concerns and review the child's growth.

25. Do you consider [CHILD'S NAME] to be: *Check one.*

Overweight

Underweight

About the right weight

Don't know

Guidance - Sometimes caregivers consider the weight and height of their child to be normal and healthy when the child measures underweight or overweight. Help caregivers understand what their child's weight per height percentile and what a growth percentile means. Explain that growth trends are more important than one single weight and height measure. Discuss that height and weight of children are taken to track growth and to identify if the child's weight is in a normal, healthy range compared to other children. After age 2, growth charts calculate Body Mass Index (BMI). You can say that percentiles are used to show where a child is compared to other children. The Head Start Child Plus system provides a weight/height percentile and is described as follows:

11) Underweight - BMI less than the 5th percentile

12) Normal weight - BMI between the 5th percentile (10%) to less than the 85th percentile

13) Overweight - BMI equal to or greater than the 85th and less than the 95th percentile

14) Obesity - BMI equal to or greater than the 95th percentile

15) Low stature - Height per age less than the 5th percentile

Guidance - Refer overweight and obese children to the health care provider and RD. It is important to address extra weight in early childhood to avoid health problems now and later in life. Discuss the important role caregivers play in building healthy eating, physical activity, and sleep habits. Most growing children don't need to lose weight but they may need to decrease the amount of weight they gain while they grow taller. It is important to track eating, activity patterns, and weight gain. Encourage caregivers to discuss their children's growth with their health care provider.

The information contained in **Helping Your Child Who is Overweight** offers helpful suggestions.

Spanish - https://www.niddk.nih.gov/health-information/informacion-de-la-salud/control-de-peso/c%C3%B3mo-ayudar-hijo-controlar-exceso-peso/Documents/hijo_exceso_de_peso.pdf

English - <https://www.niddk.nih.gov/health-information/health-topics/weight-control/helping-overweight-child/Pages/helping-your-overweight-child.aspx>

26. Is there anything else you would like to tell me about [CHILD'S NAME]'s eating or activity?

YES NO

If YES, please describe_____

Thank for your completing this questionnaire!

Appendix D- Height and Weight Protocols

Measuring body weight and stature of children two years of age and older:

Entering carefully measured weight and stature, or height, into the ChildPlus system will calculate each child's BMI percentile by age, and weight and height percentile by age. It is important to note that the calculated BMI for children is not comparable to the BMI measures calculated for children of a different age, or adult BMI measures. The standard used to compare BMI graphs and growth charts were developed by the Centers for Disease Control and Prevention (CDC) in 2000.

Measuring weight of children two years of age and older:

- Record the child's birthdate on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form*.
- Place the scale on firm flooring, wood or tile, not carpet.
- Activate the scale by turning it on. Zeroes will appear on the display panel. Make sure the scale is on "lb" not "kg". Zero balance between each measurement.
- Weigh the child in a private and quiet setting.
- Remove shoes and heavy clothing like jackets and sweaters and empty all pockets.
- Have the child step onto the center of the scale and stand with both feet as steadily as possible with their arms hanging freely.
- The child should stand unassisted with no one touching the child.
- Ask the child to look straight ahead, standing relaxed and still.
- Read the number on the scale and record the weight to the nearest 0.1 lb (for example, 45.2 lb) and record the first weight on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form*. For kg, record the weight to the nearest 0.1 kg, for example 18.2 kg.
- Ask the child to step off the scale and then zero balance the scale.
- Ask the child to step back on the scale for the second measurement. The Recorder will record the second weight on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form*.
- The two measurements must agree within 0.1 lb (0.1 kg), for example, 45.2 lb and 45.3 lb (or 20.5 kg and 20.6 kg). If they do not agree, weigh the child again. If the measures agree, use either measurement.
- Record the weight on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form*.



Figure 5

Measuring stature (height) of children 2 years of age and older:

A stadiometer is used to measure stature, or height, of standing children. The stadiometer must be placed on a hard, flat, non-carpeted surface. It is important to calibrate the stadiometer with a meter stick prior to use for regular maintenance and calibration.

This method is used for children 2 years of age or older who can stand without assistance and who are over 32 inches (81.28 cm) tall. It is best to have a measurer and an assistant/recorder. The parent/caregiver can help assure and prepare the child for measuring.

- Remove shoes and heavy sweaters, coats and bulky clothing.
- Remove ponytails, barrettes, and hats, and unbraid hair that interferes with the measurement. (These can skew the head up or down, thus giving an inaccurate reading.)
- Take the height measurement on flooring that is not carpeted and against a flat surface such as a wall with no molding.
- Have child stand with feet flat together and back to the upright measuring board. Make sure legs are straight, arms are at sides, and shoulders are level.
- Take the measurement while the child stands with head, shoulders, buttocks, and heels touching the flat surface (wall) (See Figure 6). Depending on the overall body shape of the child, all points may not touch the wall.

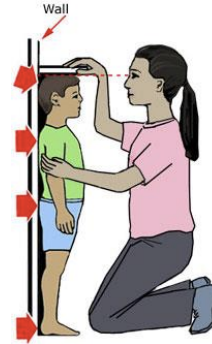


Figure 6

- The child should be looking straight ahead with their chin level.
- Lower the headpiece of the stadiometer until it firmly touches the crown on the head. The headpiece should be horizontal and level to the ground when touching the child's head.
- The eyes of the measurer should be at the same level as the headpiece.
- The intersection at which the top of the head and wall meet is the height. The Measurer call out the height measure to the 1/8 in (0.2 cm), for example 45 1/8 in (114.6 cm), and the Assistant records the measure on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form* under "height". Be sure to circle "height" on the form.
- Ensure that the child is still properly positioned and measure a second time, or until you have two measurements that agree within 1/8 in (0.2 cm). If the two measures are within 1/8 in (0.2 cm), record either measurement.
- Record the height on the *¡Muévete y CAMBIA tu Vida! Child Health Assessment Form*.
- When both weight and height measures are recorded, enter these measures into the ChildPlus system and on the *¡Muévete y CAMBIA tu Vida! Family Data Tracking Form*.

Body Mass Index for Children

ChildPlus uses the Centers for Disease Control and Prevention (CDC) Body Mass Index (BMI)-for-age growth charts. BMI is a number calculated from a child's weight and height. BMI is a reliable indicator for body fatness for most children. BMI does not measure body fat directly. BMI is age- and sex-specific because body fat changes with age and the amount of body fat differs between boys and girls. The American Academy of Pediatrics and the CDC recommends using BMI to screen for overweight and obesity in children beginning at age 2. BMI is not to be used to diagnosis children's growth or health risk. It is also not appropriate to use adult BMI categories for children.

The age, sex, length (for infants) or height (for children over age 2), and weight is entered into the ChildPlus System. A BMI number is calculated and a chart is plotted on the CDC BMI-for-age growth charts (either for boys or girls) to create a percentile ranking. The percentile compares the child's BMI number among other children of the same sex and age.

BMI-for-age weight status categories and their percentiles are in the following table²:

Weight Status Category	Percentile Range
Underweight	Less than the 5th percentile
Healthy weight	5th percentile to less than the 85th percentile
Overweight	85th to less than the 95th percentile
Obese	Equal to or greater than the 95th percentile

Talking about weight status with parents and guardians

- It is important to maintain a calm and nonjudgmental approach to BMI results.
- It is very important not to use expressions like "baby fat," "chubby," "heavy weighed", etc. to describe children. Remain factual and report the results from the CDC growth chart percentiles.

For example:

- "Your child measures in the underweight range."
- "Your child measures in the healthy weight range."
- "Your child measures in the overweight range."
- "Your child measures in the obese range."

- Review the ChildPlus growth chart with the parents. Share the child's weight status category as described by the CDC charts. If the parent has questions or would like more information, recommend that they follow-up with their health care provider.
- Only the child's health care provider can make a diagnosis about growth.
- Refer the parent to the child's health care provider to follow up on any concerns they have.