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## Evaluating the Nutritional Adequacy of Peruvian-American Children

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EVALUATING THE NUTRITIONAL ADEQUACY OF PERUVIAN-  
AMERICAN CHILDREN

by

DELAINEY DIETZ

A thesis submitted in partial fulfillment of the requirements  
for the Honors Undergraduate Thesis in Nursing  
in the College of Nursing  
and in the Burnett Honors College  
at the University of Central Florida  
Orlando, Florida

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Thesis Chairs: Dr. Desiree Diaz and Dr. Heather Peralta

## **ABSTRACT**

### **Introduction**

As people move and integrate cultures, nutritional trends may change from those of their native country to those of their new country. With global immigration, the impact of acculturation on children's health and nutrition is a new development for research. There are few studies regarding Peruvian-American nutrition and how it is affected by the combination of two cultures. The purpose of this study is to evaluate the common foods and drinks that Peruvian-American children consume, assess the children's physical health, and discuss the possible causative factors of any diet trends.

### **Methods**

The population sampled is children under 18 years living in the United States whose parent(s) or grandparent(s) were born in Peru; the primary caregivers of the children completed the survey, with participants being recruited electronically through social media and emails. Accessible through a Qualtrics link with Spanish and English formats available, the questionnaire results were analyzed for trends and compared with a previous research about children's nutrition in both Peru and the United States.

### **Results**

All children had access to cow's milk or a specific kind of nut milk. They consume at least one serving from each food group every day, but most eat a higher number of added sugars than the recommended value. The servings of fruits, vegetables, and proteins varied amongst the children. All the children were up to date on their recommended vaccinations, and have a wellness visit with their primary care physician at least once a year. They have no diagnosed health issues.

## **Discussion**

The findings align closer to American health trends than Peruvian in terms of food choice and availability and accessibility to healthcare. America's widespread availability of foods and healthcare makes it easier to obtain, although there are still many obstacles. Like Peru, cost of healthcare is a notable barrier to Americans seeking wellness visits. Additionally, inexpensive foods that are marketed to children tend to have more added sugar and carbohydrates that could lead to weight gain and other health issues such as diabetes and heart disease. The limitations of this study include the limited number of participants and that the parents may not be able to accurately report everything their child consumes daily, since older children may be out of the house more often. This study is the beginning work to show the influence of culture and regionally available resources over parent's food choices and children's health and will provide further supplementation to the myriad of global studies regarding children's nutrition.

*Keywords:* Peru, United States, children, nutrition, healthcare

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# **EVALUATING THE NUTRITIONAL ADEQUACY OF PERUVIAN-AMERICAN CHILDREN**

Nutrition differs greatly based on regional availability of food, resources, and cultural practices. Nutritional deficiencies are prevalent in many places and vary in severity, with the cause being influenced on geographic location. According to the US Census Bureau (2018), there are approximately 684,345 people of Peruvian lineage living in the United States. As there are few studies regarding the nutrition and health of Peruvian-Americans, this paper will analyze the diets and physical health of Peruvian-American children to determine their nutritional adequacy.

The migration of people to new countries, leading to the combination of cultures, can affect diet and nutritional status. Renzaho et al. (2011) found that parents who were born in a different country than their children seek to reinforce the consumption of traditional foods and cooking practices from their home's culture. However, their children who are growing up in a new country prefer to branch out and consume the mainstream food of the new culture, suggesting a dietary acculturation (2011). Acculturation is the product of the culture change that results from continuous contact between two different cultural groups (Renzaho & Burns, 2006). It involves the adaptation of values, attitudes, and behavior which lead to a unique combination of cultural practices and beliefs. In a study of Sub-Saharan African migrants and their food habits in Australia, dietary acculturation was evident through substitution, supplementation, and modification of recipes. However, because many of the added foods included fast food restaurants, the observed dietary changes were not consistent with good health (2006).

Unger et al. (2004) studied the effects of acculturation on Asian-American and Hispanic adolescents and found that a higher level of association with the American culture increased the likelihood for sedentary behavior and fast-food consumption. It is theorized that acculturation to the United States manifests as a desire to partake in activities and eat foods that are classified as “American.” These include activities such as watching TV and going to fast-food restaurants (2004). A desire to fit into the perceived American culture can lead to increased involvement in obesity-related behaviors among adolescents, leading to adverse health outcomes in the future. However, dietary acculturation is not always a negative occurrence; it can lead to a positive impact on intake such as the addition of new food groups which introduce balanced micronutrients to the diet (2006).

Despite geographical location and acculturation affecting the micronutrients that children consume, children around the world still experience a variety of nutrient deficiencies. The Centers for Disease Control (CDC) found that at least half of children worldwide younger than five years of age suffer from vitamin and mineral deficiencies. Six nutrients are essential: Iron, Vitamin A, Vitamin D, Iodine, Folate, and Zinc (CDC, 2020). Along with other minerals such as calcium, these nutrients are necessary for the proper growth and development of children and adolescents. A deficiency of different micronutrients can lead to specific problems in children. According to Best et al. (2010), anemia resulting from iron, folate, or vitamin B12 deficiency can impact a child’s intellectual performance and cognitive development. A deficiency of Vitamin A, which is found in dairy products, fruits, and vegetables, affects eye health and immune function. Insufficient iodine, found in local soil, water, and iodized salt, can lead to stunted growth, impaired mental development, and a thyroid goiter with its complications. A deficiency of zinc, found in animal-based foods, can negatively affect brain development, cognition, and other

biologic processes (2010). Overall, it is crucial for children to have a well-balanced diet full of essential micronutrients to promote healthy growth and development.

Many types of foods provide the myriad of micronutrients needed by the human body. In her research article, Allen (2008) discusses how vitamin A is derived from dairy products and fruits and vegetables rich in carotenoids. Iron, zinc, and vitamin B12 can be found in animal-based foods. Folate comes from legumes, fruits, vegetables, dairy products, and eggs. Iodine intake is unique as it is dependent on the iodine content of the local soil and water, and deficiency is typically addressed using strategies such as salt iodization (2008). There are many food options to provide these micronutrients, but people around the world may find themselves limited by factors such as geographical location, local availability, and culture.

## **Peru**

Chronic child malnutrition refers to any consistent deficiencies, excesses, or imbalances in a child's intake of nutrients (World Health Organization, 2020). In Peru, chronic child malnutrition has significantly decreased from 33% of boys and girls under the age of 5 in 2000 to 12% of boys and girls under 5 years of age in 2019 (UNICEF, 2019). Regional differences in malnutrition rates are noted throughout the country, signifying the influence of regional availability of resources on children's ability to access a variety of vitamins and minerals. In the rural Huancavelica Region, 33% of children are malnourished, while only 5% of children in metropolitan Lima face malnourishment (2019). One study found that rural regions of Peru have a tendency for higher rates of micronutrient inadequacies due to limited regional resources, with a significant amount of iron, zinc, Vitamin A, Vitamin B12, and folate deficiencies (Berti et al., 2014). Anemia remains a prevalent condition as well, with 56-68% of children across the regions being afflicted (2019).

The patterns of overweight and obesity in children vary based on geographical location throughout the country. There is a higher prevalence of childhood obesity in cities such as Lima, along the coast of Peru, as compared to cities located in the highlands and the rainforest (Torres-Roman et al., 2018). For instance, between 2007 and 2010, the highest prevalence of obesity in children under five years of age was 10.1% in Lima while only 2.6% in towns in the rainforest (Pajuelo-Ramirez et al., 2011). Around the world, increased levels of obesity have been linked to urbanization which is related to an increase in poor dietary habits, which could explain these findings (Powell et al., 2007).

Along with overweight and obesity issues, Peruvian children face high rates of growth stunting (Chaparro & Estrada, 2012). Stunting results from chronic undernutrition which leads to impaired linear growth; it can begin as early as six months of age when children begin eating foods that are inadequate in quantity and quality (Caulfield et al., 2006). Rural regions of Peru tend to face more incidences of stunting. Peru's Ministry of Health had long focused its resources on surveillance and control of infectious diseases, but with the increasing rates of stunting and obesity in children, it recently focused its efforts on improving childhood nutrition to combat these issues (2012).

### **The United States**

The United States has incidences of malnutrition which occurs in children due to dietary imbalances rather than nutritional deficiencies (The John Hopkins University, n.d.). While only about 1% of children in the United States suffer from chronic malnutrition, overnutrition is becoming a common issue in children, causing nutrient imbalances (n.d.). Overnutrition occurs when people eat too much, do not eat a variety of healthy food groups, do not exercise, or take

too many vitamins as dietary replacements. Risk of overnutrition increases by being more than 20% overweight or consuming a high amount of fat and salt (n.d.).

Drake (2017) deliberates that while micronutrient deficiencies are common in the developing world, micronutrient inadequacies are more common in the United States and other developed countries. While the focus of Drake's work is primarily for a Northwestern state in the U.S., the topics discussed are applicable to the entirety of the United States. Micronutrient inadequacies are defined as nutrient intake less than dietary intake recommendations. These cause more covert symptoms than micronutrient deficiencies and can be difficult to clinically detect; these symptoms include general fatigue, reduced ability to fight infections, or impaired focus (2017). Inadequacies of micronutrients have significant long-term implications on health and increase the risk for chronic diseases.

Many Americans do not reach the micronutrient intake requirements; this is due to many people living in the United States eating an energy-rich, nutrient poor diet that is low in fruit, vegetables, whole grains, and dairy (2017). A significant portion of the United States population has inadequacies of vitamin D, vitamin E, magnesium, calcium, vitamin A, vitamin C, all the B vitamins, and several minerals including zinc and iron; overall, 80% of the U.S. population is at risk for select nutrient inadequacy (Marriott et al., 2010). These micronutrient inadequacies could be due to Americans eating a higher concentration of other nutritional components. For example, 78% of American children under 18 years of age consume, on average, 3.1 grams of sodium per day, compared with the adequate intake recommendation of 1.2-1.5 grams per day (2017). Individuals in America with nutrient intake below the required amount tend to be associated with consuming a diet with higher added sugars and more calories (2010).

## **PURPOSE OF STUDY**

The purpose of this study is to evaluate the nutritional adequacy of Peruvian-American children based on the nutrients they consume and their physical health.

### **Research Aims**

1. Identify the common foods and drinks consumed by Peruvian-American children.
2. Evaluate Peruvian-American children's access to healthcare.
3. Assess the physical health of Peruvian-American children.

## **METHODS**

### **Design**

This is a descriptive study that analyzes the types nutrients provided to Peruvian-American children, their access to healthcare, and their health status.

### **Participants**

The population sampled is caregivers of children under 18 years of age living in the United States whose parent(s) or grandparent(s) were born in Peru. The caregivers were to fill out the survey on behalf of their children. Participants were recruited through Peruvian-American and other Hispanic social media groups and emails to connections made in work and church groups. Participant recruitment in physical locations was limited due to the COVID-19 pandemic.

### **Inclusion Criteria**

Participants over the age of 18 living in the United States with children whose parent or grandparent were originally from Peru were eligible for participation in this study. Participants were excluded if they were under the age of 18 or if their children were over 18 years of age.

### **Procedures**

Once IRB approval was obtained, the data was collected anonymously using a Qualtrics survey. No identifying information was included in the survey. The data was deleted once the surveys were analyzed.

### **Questionnaire**

A thirteen-item questionnaire provided on Qualtrics was utilized for this study. Spanish and English versions were made available to participants. Data was collected pertaining to the

foods and drinks that the children consume throughout the day, their current health status, and their access to a healthcare provider.

### **Data Analysis**

Descriptive statistics were used to analyze the responses to the survey, utilizing mean, mode, and percentages.

## RESULTS

### Sample Characteristics

Ten responses for the survey were collected. The age range of the children included in the survey was from 2 to 16 years. Due to four of the respondents having to be excluded due to children being over 18 years of age and thus out of the age range for this study, six of the responses were used for results and analysis.

### Research Aim 1: Identify the common foods and drinks consumed by Peruvian-American children.

The average amount of servings of milk that the children consume is 1.83 cups. Sixty-seven percent of the children drink cow's milk, while 33% consume almond milk. The types of drinks that the children consumed throughout the day were distributed between milk, juice, and water, as shown in Table 1. Thirty-three percent of the participants reported that their children take a daily vitamin; these included daily multivitamins and vitamin C.

**Table 1**

*Frequency of Drinks Consumed Meal with Each*

Drink	Drinks with Breakfast Frequency	Drinks with Lunch Frequency	Drinks with Dinner Frequency	Drinks with Snacks Frequency
Milk	83%	17%	33%	33%
Juice	17%	17%	50%	50%
Water	0%	66%	17%	17%

Participants were asked to estimate the servings of each food group that their children received throughout the day. The estimates are portrayed in Table 2, showing a similar range

amongst the servings for “Fats, Oils, and Sweets” and a range of servings for the remaining food groups.

**Table 2**

*Servings of Group Received Every Day Each Food*

Age	Fats, Oils, Sweets	Milk, Yogurt, Cheese	Meat, Poultry, Fish, Dry Beans, Eggs, Nuts	Vegetables	Fruits	Bread, Cereal, Rice, Pasta
2	1	5	1	6	5	1
10	1	2	3	3	1	3
10	1	1	2	2	1	2
12	2	1	1	1	1	2
12	1	1	2	1	0	2
16	2	2	1	2	3	1

The final question regarding nutrition pertained to the grams of added sugars that the children consume daily. Table 3 shows the parent’s estimates of sugar in their children’s diets.

**Table 3**

*Approximate Number of Added Sugar Consumed Per Day*

Age	Added Sugar (grams)
2	0
10	56
10	2
12	45
12	40
16	82

**Research Aim 2: Evaluate Peruvian-American children’s access to healthcare.**

All participants reported that their children were up to date on their vaccinations. Sixty-seven percent of the participants reported that their children attend wellness visits twice a year, while 33% stated that their children go to the doctor once a year.

**Research Aim 3: Assess the physical health of Peruvian-American children.**

All participants denied that their children had any diagnosed health issues. Table 4 breaks down the children’s height and weight. Additionally, their BMI is calculated based on the Child and Teen calculator provided by the CDC.

**Table 4**

*Height, Weight, and BMI of the Children*

Age	Height (inches)	Weight (pounds)	BMI
2	34	27	16.4
10	59	85.6	17.3
10	58	85	17.8
12	60	105	20.5
12	61	110	20.8
16	66	150	24.2

## DISCUSSION

### **Research Aim 1: Identify the common foods and drinks consumed by Peruvian-American children.**

Most of the children consumed milk for breakfast. Milk is a source of calcium, and since the 1930s has been fortified with vitamin D to increase children's intake of vitamin D-rich foods (Altschwager & Dwyer, 2017). Two of the children drink primarily almond milk as opposed to cow's milk. Plant-based milk is fortified with similar levels of vitamins A, D, and calcium to that of regular milk. However, there are typically more grams of added sugars in plant-based milks (Schuster et al., 2018). The American Heart Association recommends children from 1-8 years of age have 2 cups of dairy per day, while children ages 9-18 have 3 cups of dairy per day (n.d.). The younger children in this study met these recommendations, but the older children consumed less milk and dairy products per day, putting them at risk for decreased levels of calcium and vitamin D.

Between 17% to 50% of the children consumed juice at a meal throughout the day. Research has found that the leading source of added sugars in children's diets comes from sugar-sweetened beverages; the top sources of added sugar in Hispanic American children's diets are sweetened fruit drinks (Russo et al., 2020). The recommended levels of added sugars are 25 grams per day for children between two and 18 (American Heart Association, n.d.). Most of the children in this study exceeded the recommended levels of added sugar. Besides juice, the top sources of added sugar in American children's diets are candies, cereals, and soft drinks (2020). All the children in the study had at least one serving of food in the category of "Fats, Oils, and Sweets" and at least one serving in the "Bread, Cereal, Rice, and Pasta" category, attributing to several possible sources of added sugars in their diets.

The American Heart Association (n.d.) recommends children to have 2-3 servings of fruit and 2-4 servings of vegetables per day. The number of servings of fruits and vegetables per day was variable among the children in this study, with the youngest and oldest participants eating the most servings of fruits and vegetables. Protein intake based on the responses to serving sizes of “Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts” also varied, with the children in the middle of the age range consuming the most. The differences among the children could be attributable to dietary preferences or availability in the household.

In a recent study, children living in Peru were found to consume evaporated milk more often than cow’s milk due to the inability to refrigerate in rural locations; additionally, the children had a diet high in carbohydrates and low in protein (Garcia Medina, 2020). In comparison, while Peruvian-American children have access to several types of milk, it may be a personal choice to drink less milk in favor of other options. Inexpensive food choices with added sugar are also more commercially available in the United States, and like Peruvian-born children, Peruvian-American children consume a higher amount of carbohydrates that is reflective of the American culture. Children who are assimilated into American culture are found to consume fewer servings of vegetables, more servings of sugary drinks, and more frequently eat dinner away from home; their diets can influence their families’ consumption of traditional cultural foods versus an American-based diet (Soto et al., 2017).

**Research Aim 2: Evaluate Peruvian-American children’s access to healthcare.**

Outside of healthcare visits for unexpected illnesses or injuries, all the children in this study went to the doctor at least once a year for a wellness visit, with the majority seeing a doctor twice a year. All children appeared to have access to healthcare without boundaries. In the United States, however, there are many disparities in healthcare visits. Adults in the U.S. are

more likely to report financial barriers to accessing health care, and research has found there are fewer physician visits per capita than other comparable countries (Hargreaves et al, 2015). In the U.S., there are high levels of need for childhood preventive services based on the availability of and the ability to utilize healthcare services (Frieden, 2014). The greatest barriers in the U.S. for doctor's visits include socioeconomic status, which is found to influence likelihood of receiving preventive services and having a regular doctor (2015). Routine healthcare visits for wellness checkups are important during childhood to benefit short- and long-term health outcomes.

In Peru, there was found to be a lack of communication regarding healthcare for children that resulted in caregivers being unsure whether their children's healthcare would be free. This uncertainty led to caregivers only bringing their children to local clinics if they were ill or injured (Garcia Medina, 2020). There is less funding in Peru allocated toward healthcare and healthcare workers are more heavily distributed in urban areas rather than rural (World Health Organization, n.d.). Seeking healthcare in both the United States and Peru is influenced on socioeconomic status and healthcare resources present near one's location.

**Research Aim 3: Assess the physical health of Peruvian-American children.**

None of the children had been diagnosed with any health issues. Based on their BMIs calculated with their age, height, and weight, all were found to be a healthy weight except for the oldest child, whose BMI represented overweight. In this case, it is important for the family to prevent excess weight gain by ensuring the child eats a healthy diet and has adequate exercise. For the rest of the children, families should ensure they are maintaining healthy food and activity habits as they get older to prevent weight gain.

In the United States, about 1% of children suffer from malnutrition, which is more often due to dietary imbalances and over-nourishment due to an emphasis on diets high in fat and salt

(Johns Hopkins University, n.d.). In Peru, there are higher rates of childhood overweight or obesity in urban areas, and an increased prevalence of malnutrition in rural areas (Hernandez-Vasquez et al., 2016). Peruvian children in rural areas received less nutrients in their diet that lead to issues such as malnourishment and anemia (Garcia Medina, 2020).

## **LIMITATIONS**

One of the limitations of this study includes the small sample size, which decreases the statistical power of this study. Despite many organizations and people being invited to the survey, it is hard to engage people to complete the survey online as opposed to in person. Due to COVID-19, there were restrictions to advertising to ensure social distancing, so online platforms were utilized. Repeating this study with a larger sample size would help validate the results.

Additionally, since the parents were filling out the survey on behalf of their children, it may have been difficult to estimate some of the answers, such as serving sizes and grams of added sugars in their diets. This limitation is especially true for older children who may eat more outside of the house at school and with friends. In this case, it is important to consider that the serving sizes may be underestimated or overestimated.

## **NURSING IMPLICATIONS**

This study shows the influence of culture and regionally available resources over parent's food choices and children's health. The implications for nursing practice include the knowledge of the variability of health; not only is it genetic, but it can also be influenced by one's culture and environment. Nurses can take these factors into consideration in their professional practice. For instance, when teaching patients and community members about nutrition and physical health, it is important to discuss the interplay of genetics and one's environment. Nurses must consider that physical health is a combination of activities and nutritious, balanced eating, and the culture of America can sometimes create a barrier to a healthy lifestyle. There are several online and physical resources available to teach people about accessible physical activities and healthy foods that they can find in their community.

Additionally, cultural competence is a very important aspect of nursing. Cultural competence encompasses the nurses' understanding of the perceptions and practices of people across different languages and cultures in order for the nurse to provide appropriate and respectful care (Murphy, 2011). Especially in the United States, which is home to a wide range of cultures, it is important for the nurse to understand that culture influences people's perception of their own health. Disease processes and medications also may have a variety of effects in different ethnic groups (2011). Developing an understanding of health as it is influenced by ethnicity, culture, and environment will help nurses provide more holistic and considerate care for their patients.

## **SUMMARY**

There are many factors that influence diet and nutrition, including location, socioeconomic status, and family traditions. Many studies show the strength of American culture on the acculturation of diets; in the United States, there are numerous sources of added sugars that are present in foods marketed for children, and there are many inexpensive options such as fast-food restaurants that influence dietary choices. Since the sample size of this study is small, another study conducted with a greater number of participants would help verify the results. Most of the children included in this study had relatively balanced diets, with servings of added sugar higher than recommendations that may be attributable to the amount of juice, cereals, and sweets they consume daily. None of the children had any diagnosed health issues, and all visited the doctor at least once a year outside of illnesses and injuries for a wellness visit. Overall, the Peruvian-American children included in this study seemed to have a nutritional status reflective of the United States culture.

**APPENDIX A**  
**IRB APPROVAL LETTER**



UNIVERSITY OF CENTRAL FLORIDA

**Institutional Review Board**

FWA00000351  
IRB00001138, IRB00012110  
Office of Research  
12201 Research Parkway  
Orlando, FL 32826-3246

EXEMPTION DETERMINATION

December 1, 2020

Dear Desiree Diaz:

On 12/1/2020, the IRB determined the following submission to be human subjects research that is exempt from regulation:

Type of Review:	Initial Study, Initial Study
Title:	Evaluating the nutritional adequacy of Peruvian-American children
Investigator:	Desiree Diaz
IRB ID:	STUDY00002187
Funding:	None
Grant ID:	None
Documents Reviewed:	<ul style="list-style-type: none"> <li>• 254 Spanish, Category: Consent Form;</li> <li>• Certified Translator, Category: Translation Verification;</li> <li>• Email Spanish, Category: Recruitment Materials;</li> <li>• Email to Potential Participants.docx, Category: Recruitment Materials;</li> <li>• HRP-254-FORM Explanation of Research.V3.pdf, Category: Consent Form;</li> <li>• HRP-255-FORM - Request for Exemption.V3.docx, Category: IRB Protocol;</li> <li>• Recruitment Flyer, Category: Recruitment Materials;</li> <li>• Recruitment Flyer, Category: Recruitment Materials;</li> <li>• Social Media Post.docx, Category: Recruitment Materials;</li> <li>• Social Media Spanish, Category: Recruitment Materials;</li> <li>• Spanish HUT survey, Category: Survey / Questionnaire;</li> <li>• Supplemental Educational Flyer, Category: Other;</li> <li>• Survey Questions, Category: Survey / Questionnaire;</li> </ul>

This determination applies only to the activities described in the IRB submission and does not apply should any changes be made. If changes are made, and there are questions about whether these changes affect the exempt status of the

human research, please submit a modification request to the IRB. Guidance on submitting Modifications and Administrative Check-in are detailed in the Investigator Manual (HRP-103), which can be found by navigating to the IRB Library within the IRB system. When you have completed your research, please submit a Study Closure request so that IRB records will be accurate.

If you have any questions, please contact the UCF IRB at 407-823-2901 or [irb@ucf.edu](mailto:irb@ucf.edu). Please include your project title and IRB number in all correspondence with this office.

Sincerely,



Gillian Bernal  
Designated Reviewer

**APPENDIX B**

**ENGLISH VERSION OF QUESTIONNAIRE**

HUT Questionnaire:

1. Are either of your child's parents or grandparents from Peru?
2. How old is your child?
3. Which of these food groups do you give your child daily? Please estimate the number of servings your child receives daily as well (Example: Two servings of vegetables per day can be written as Vegetables \_2\_)  
Fats, Oils, and Sweets \_\_\_\_\_ Milk, Yogurt, and Cheese \_\_\_\_\_  
Meat, Poultry, Fish, Dry Beans, Eggs, and Nuts \_\_\_\_\_  
Vegetables \_\_\_\_\_ Fruits \_\_\_\_\_  
Bread, Cereal, Rice, and Pasta \_\_\_\_\_
4. Daily, how many servings of added sugars does your child eat? Added sugars can be found in soft drinks, energy drinks, candy, cakes, cookies,
5. Please list what your child drinks with breakfast, lunch, dinner, and snacks:  
Breakfast \_\_\_\_\_  
Lunch \_\_\_\_\_  
Dinner \_\_\_\_\_  
Snacks \_\_\_\_\_
7. Do you have access to milk? If so, do you give your child cow's milk, almond milk, soy milk, or any other kind of milk (please specify)?
8. How many times a day do you give a glass of milk to your child to drink?
8. How many times a year do you take your child to visit a doctor for a wellness visit or if he or she is NOT sick?
9. Is your child up to date on recommended vaccinations?
10. Does your child take any daily vitamins or dietary replacements? If so, what kind?
11. What is your child's approximate height?
12. What is your child's approximate weight?
13. Does your child have any health issues (i.e. diabetes, high blood pressure, etc.)? If so, what was your child's age when these issues were diagnosed?

**APPENDIX C**

**SPANISH VERSION OF QUESTIONNAIRE**

HUT Questionnaire:

1. ¿Son algunos de los padres o abuelos de su hijo del Perú?
2. ¿Cuántos años tiene su hijo(a)
3. ¿Cuáles de estos grupos de alimentos le da usted a su hijo(a) diariamente? Por favor estime el número de porciones que su hijo(a) recibe diariamente también. (Ejemplo: Dos porciones de verduras por día se pueden escribir como Verduras 2)  
Grasas, Aceites y Dulces \_\_\_\_\_ Leche, yogur y queso \_\_\_\_\_  
Carne, Aves, Pescado, Frijoles Secos, Huevos y Nueces \_\_\_\_\_  
Verduras \_\_\_\_\_ Frutas \_\_\_\_\_  
Pan, Cereales, Arroz y Pasta \_\_\_\_\_
4. Diariamente, ¿cuántas porciones de azúcares añadidos come su hijo(a)? Los azúcares añadidos se pueden encontrar en refrescos, bebidas energéticas, dulces, pasteles, galletas, etc.
5. Favor de listar lo que su hijo(a) bebe con el desayuno, el almuerzo, la cena y los refrigerios:  
El desayuno \_\_\_\_\_  
El almuerzo \_\_\_\_\_  
La cena \_\_\_\_\_  
Los refrigerios \_\_\_\_\_
6. ¿Tiene acceso a la leche? Si lo tiene, ¿le da a su hijo(a) leche de vaca, leche de almendras, leche de soja o cualquier otro tipo de leche (favor de especificar)?
7. ¿Cuántas veces al día le das un vaso de leche a su hijo(a) para beber?
8. ¿Cuántas veces al año lleva a su hijo(a) a visitar a un médico para una visita de bienestar o si NO está enfermo(a)?
9. ¿Está su hijo al día sobre las vacunas recomendadas?
10. ¿Su hijo(a) toma vitaminas diarias o reemplazos dietéticos? Si lo hace, ¿de qué tipo?
11. ¿Cuál es la altura aproximada de su hijo(a)?
12. ¿Cuál es el peso aproximado de su hijo(a)?
13. ¿Su hijo(a) tiene algún problema de salud (es decir, diabetes, presión arterial alta, etc.)? Si lo tiene(n), ¿qué edad tenía su hijo(a) cuando se diagnosticaron estas dificultades?

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