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Food Preferences Among Children at Arcadia Elementary School

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**Community-Based Research Capstone Project
In Latin American and Caribbean Studies**

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Executive Summary

In Spartanburg, the South Carolina Department of Health and Environment Control, Spartanburg County School Districts, and Partners for Active Living have been monitoring the Body Mass Index of 1st, 3rd and 5th grade students since 2009 and have seen that the BMI of Hispanic and African American children is significantly higher than that of their white peers (DHEC 2017). In 2016, the racial composition of Spartanburg County was 69.1% White, 20.5% Black, .1% American Indian, 2.2% Asian, 2.3% as two or more races, and 6.3% identified as Hispanic (United States Census Bureau). There are multiple initiatives and organizations such as the Healthy Schools Initiative, Preventing Obesity by Design, SPARK PE, and Eat Smart Move More Spartanburg which are working to create healthier school environments to improve student fitness and wellbeing for children of all races and ethnicities. This study hopes to contribute to this conversation by analyzing the food preferences of children from Arcadia Elementary School in Spartanburg, which serves mainly students of minority populations, and learning about the perspective of parents from ARCH Ministries, which serves Arcadia Elementary by offering a high-quality, low-cost after-school program for 1st grade students. This study works to answer the following questions: (1) what are the food preferences of children who attend Arcadia Elementary School, and (2) what do parents/caregivers report to be their children's preferences, and what are parent/caregiver desires for what they'd like their children to eat?

My research, conducted from September through November of 2017, showed that the children preferred more processed foods and starches instead of healthier options such as fruits and vegetables, even when healthy options were available. According to the parents/caregivers surveyed, their children prefer to eat processed American meals. Parents/caregivers desired for their children to eat a variety of different foods including fruit, vegetables, proteins, and

traditional Hispanic food. This study acknowledges that healthy meal options are available at schools, but there needs to be more research on how to best encourage students to take advantage of these nutritious choices in order to lower child obesity rates in the community. Information from this study will also be helpful in making inclusive meal plans for multicultural and ethnic communities.

Literature Review

In preparing for research, I examined multiple relevant dimensions related to the increasing child obesity rates in the United States, as well as trends in Mexico, the country of origin for the majority of Latinx families in Spartanburg County. In order to understand these increasing rates, I reviewed research about the rising rates of child obesity in Mexico. The following literature review is comprised of the following sections: Increasing Obesity Rate of Youth in Mexico, Increasing Rate of Child Obesity in the United States, The Impact of Globalization on Mexican Culture, “Festival Food” Paradox and the Understanding of a Healthy Diet, Link Between Parent and Child Obesity, National School Lunch Program, and Spartanburg Child Obesity Statistics.

Increasing Obesity Rate of Child Obesity in Mexico

It is important to contextualize the challenge of overweight and obesity in a transnational, hemispheric context. Indeed, obesity and overweight has increased in both Mexico and the United States since the beginning of the 1960s’ (Johnson, 2012). In 2016, 14.8% of children in Mexico were considered obese, 15.2 % in Chile, and 21.4 % in the United States (World Health Organization, 2016). The rate of overweight and obese children in Mexico has increased significantly since the two National Nutrition Surveys were conducted in 1988 and 1999 (Barquera, et al., 2009). Most children of Latinx identity in Spartanburg County are of Mexican

heritage, followed by Central American heritage (United States Census Bureau, 2010). In Mexico in 2010, 16.7% of infants, 26.2% of elementary school children, and 30.9% of adolescents were obese or overweight (Barquera et al., 2010).¹ The increasing rate of overweight and obese children in Mexico is associated with a number of socioenvironmental factors. In Mexican public schools, there are minimal healthy food options, a shortage of potable water, and there is an increased consumption of sweetened drinks in school-aged children (Aceves-Martins, Llauradó, Tarro, Solà, & Giralt, 2016; Barquera et al., 2010). Children are participating in more sedentary activities because they reside in unsafe neighborhoods, or they do not live in close proximity to public playgrounds (Martínez-Munguía & Navarro-Conteras, 2014; Turnbull, Gordon, Martínez-Andrade, & González-Unzaga, 2019). Additionally, one study showed that family outings often revolve around going out to eat processed food (Turnbull, Gordon, Martínez-Andrade, & González-Unzaga, 2019). Globalization is also contributing to the epidemic by increasing children's exposure to advertisements for processed, innutritious, affordable foods targeted towards children (Witkowski, 2007).

Increasing Obesity Rate of Child Obesity in the United States

Like Mexico, the United States is also facing a child overweight and obesity epidemic. As of 2019, obesity affects nearly 13.7 million children in the United States (Centers for Disease Control and Prevention, 2019). Noteworthy differences are evident between people of different races and ethnicities. In 2015-2016, the Nation Center for Health Statistics published the prevalence of obesity among children of different races: Non-Hispanic black youth at 22%, Hispanics at 25.8%, non-Hispanic white at 14.1%, and non-Hispanic Asians at 11% (Hales,

¹ A child is considered overweight when their body mass index is at or over the 85th percentile and is considered obese when their body mass index is at or over the 95th percentile (Centers for Disease Control and Prevention, 2018).

Carroll, Fryer, & Ogden, 2017). Even though white youth in the United States also have an increasing obesity rate, the rate for minority populations' is significantly higher.

The Impact of Globalization on Mexican Culture

In order to understand why minority populations are suffering from higher obesity rates, it is important to take various factors into consideration. For example, food is an integral part of Mexican cultural practices. The traditional Mexican diet is rich in fruits and vegetables such as beans, chiles, nopales, squash, corn, and tomatoes (Marcos, 2017) and is relatively healthy. A study published by the Academy of Nutrition and Dietetics reported that Mexicans often associate the preparation and consumption of traditional food as part of their ethnic identity and practice. It is also seen as a way to bond with family members (Ramírez, Golash-Boza, Unger, & Baezconde-Garbanati, 2018).

There can also be an association between the child's health and the perception of whether or not a family is able to provide for the family. For example, one study notes that some Mexican mothers may prefer to have a "chubby" child because it shows that their child is not malnourished, but like many others, mothers are not always aware of the links between obesity and chronic diseases (Martinez, Rhee, Blanco, & Boutelle, 2016). In a study conducted by Lindsay, Sussner, Greaney, & Peterson (2010), mothers who were aware of the dangers of child obesity still expressed cultural pressures to have a "chubby child." Cultural influence thus may play an active role in the physical wellbeing a child.

Globalization and acculturation can work in tandem to create more homogenous societies and to erode culinary practices in traditional diets, such as the traditional Mexican diet. Multiple studies show that there are correlations between globalization and obesity; trade, travel and migration, food advertisements, and economic status are all factors which may play a role

(Chopra, M., Galbraith, S., & Darnton-Hill, I. 2002; Hawkes, 2006). One of the outcomes of the North American Free Trade Agreement between the United States, Mexico, and Canada was that processed Western food became readily accessible and cheap, especially in Mexico where it was not common before the signing of the 1994 trade deal (Harvard School of Public Health, 2016; Hawkes, 2006; McMillan, 2015). In the years since the ratification of NAFTA, more American supermarkets have opened in Mexico. For example, Walmart opened its first store in Mexico in 1991 and now has close to 2,114 stores in Mexico (Wolk, 2018).

Globalization has also profoundly impacted the relationship between the United States and Mexico in terms of the flow of both products and labor. Mexico is “the United States’ second largest export market, third largest overall trading partner, and the top country of origin for immigrants living in the country” (Wilson & Wood, 2016). Through trade and immigration, these countries are intricately tied.

In addition to moving people from one physical environment to another, immigration can also re-shape daily routines, family life, and diet. Immigrants in the United States with low incomes face additional challenges, one of these being food insecurities, a challenge they share with low-income, non-immigrant families. A study conducted by Children’s Health Watch showed increased food insecurity among immigrant children in households with foreign-born mothers with “34 percent among families with Mexican mothers, 19 percent for those with Central American mothers, and 18 percent for those with Caribbean mothers, compared to 6 percent among families with U.S.- born mothers” (Children’s HealthWatch, 2016, pp. 3-4). Similarly, food deserts inordinately affect minority populations, the homeless, and other lower

socioeconomic groups in the United States (Grauel & Chambers, 2014).² Children who live in lower socioeconomic neighborhoods are more likely live in a food desert; they are also at a higher risk for obesity (Public Broadcasting Network, 2011). If traditional foods are unavailable or too expensive, immigrant families are likely to assimilate to mainstream culture (MacArthur, Anguiano, & Gross, 2004).

In a study conducted by Martin, Hook, and Quiros (2015), findings showed that immigrant children are more likely to develop unhealthy eating patterns than adults. This may be due to a variety of reasons, such as the stress of the assimilation process, especially at school. As children of immigrant families work to assimilate, they do so by dressing like their classmates and eating the same foods (Guendelman, Cheryan, & Monin, 2011; Nguyen, 2007). In fact, two studies note that children's preference for American food can lead to less traditional meals to being made in the home (MacArthur, Anguiano, & Gross, 2004; Gray, Bossman, Dodson, & Byrd, 2005).

“Festival Food” Paradox and the Understanding of a Healthy Diet

Due to changes in surroundings, immigrants have the challenge of not only adjusting to a new culture, but adapting to a different lifestyle while maintaining the traditions of importance to them. The “festival food” hypothesis claims that Mexican immigrants move away from eating daily, traditional foods from Mexico and replace quotidian diet with specialty foods from Mexican holidays and festivals. The effect is that Mexican immigrants view “traditional” Mexican foods as unhealthy and American foods as more nutritious (Ramírez, Golash-Boza, Unger & Baezconde-Garbanati, 2018; Azar et al., 2012). In the study conducted by Ramírez et

² A food dessert in the United States is defined by the American Nutrition Association as “parts of the country vapid of fresh fruit, vegetables, and other whole foods, usually found in impoverished areas” (Tulane University School of Social Work, 2018; Gallagher).

al., 2018, a participant stated, “*I try to stay healthy, I try but it doesn't go—when you come from a Hispanic family it's difficult because they're used to eating big meal. Your rice, your beans, your tortillas, your tamales. It's your heritage, it's what you do and it's difficult*” (p. 9). Although American food in this study was not always seen as healthy, it was often seen as more nutritional due to the lack of animal fat in cooking. Participants described healthy American food as salads, sandwiches, and grilled chicken. Immigrants want to preserve their culture and maintain a healthy lifestyle, but do not always know how to do both simultaneously, nor do all immigrants have the necessary resources. (Ramírez, Golash-Boza, Unger & Baezconde-Garbanati, 2018). The availability of traditional ingredients and cultural differences between the United States and Mexico limits the abilities of Mexican-American immigrants to replicate their dietary culture fully.

Link Between Parent and Child Obesity

The influence of parents on their children’s health is significant because they play an important role in shaping the current and future lifestyle choices of their children. A study published by *The New England Journal of Medicine* shows that parental obesity increases the likelihood that the child will be obese when they are young and when they enter into adulthood as a result of environmental factors and/or genes. If a child surpasses six years of age and they are obese, they are 50% more likely to be obese as an adult (Whitaker, Wright, Pepe, Seidel & Dietz, 1997). Additionally, a physically active parent is more likely to have a child with a lower body mass index (Erkelenz et al., 2014). Parent obesity is one of many possible influences which can lead to child obesity.

National School Lunch Program

What other factors might be important with regard to child obesity in US contexts? School lunch programs are one. In 1946, President Harry Truman saw the need for a federally run lunch program in the United States that could provide well-balanced meals for children in schools at a low-cost or no-cost. The number of children receiving meals has increased greatly, starting with 22.4 million children in 1970 and growing to 30.4 million children in 2016. There are nutritional requirements set by the Federal government for meals served (*The National School Lunch Program*, 2019). A study shows that public schools provide balanced meals, but students' food preferences for the higher processed options greatly influence their consumption of innutritious meals. Students' favorite food items that are provided by the federally funded programs are those that most resemble meals from fast food restaurants (Johnson, Gerson, Porter & Petrillo, 2015; Schanzenbach, 2009). On average, students who eat lunches provided by the school consume more calories than those students who bring their lunches from home (Schanzenbach, 2009). A study published by the *American School of Health Association* shows that public-school students are more likely to have higher BMI levels than private school students at their same socio-economic statuses. (Li & Hooker, 2010). The National Lunch Program plays an integral part in providing food for the nation's children.

Spartanburg Child Obesity Statistics

The child obesity rates in Spartanburg, like other locations in the South, are significantly higher than the national average (Centers for Disease Control and Prevention, 2019). In Spartanburg, South Carolina, the SC Department of Health and Environment Control, *Partners for Active Living*, and all seven Spartanburg County Districts have monitored the Body Mass Index of 1st, 3rd, and 5th grade students from 2013-2019. Results have shown significant

disparities. Combined, 48.2% of Hispanic children are obese or overweight, 37.1 % for African American students, and 29.7% for white students (DHEC 2017). Children who are overweight are at risk for heart disease, type 2 diabetes, asthma, sleep apnea, and judgment by peers. It can also lead to lower self-esteem which has the ability to hamper a student's academic and social progress ("Health Problems and Child Obesity"). This is prevalent problem in the United States, specifically here in Spartanburg. It is imperative to find a solution.

Methodology

This was a qualitative study the purpose of which was to gain a better understanding of child dietary preferences and potential links to child obesity in an elementary school district with a high percentage of Latinx students. The study combined by observational data and a two-question interview with caregivers.

Population and Location Selection

This study was conducted at Arcadia Elementary School and ARCH Ministries in Spartanburg, South Carolina. Arcadia Elementary School is a Title I elementary school in District 6, and has nearly 450 students enrolled (National Center for Education Statistics). The race/ethnicity demographics from 2017-2018 and 2018-2019 shows that over half of the children enrolled identify as Hispanic, followed by black and white students who are equally enrolled (Common Core of Data, 2019.) ARCH Ministries is a low-cost after-school program which serves 1st grade students from Arcadia Elementary School; children at ARCH receive a healthy snack after school and four days a week, a nutritious meal prepared by members of the Wofford College Nutrition Now initiative or by community volunteers.

Children from Arcadia Elementary School were observed for 5 days consecutively during their lunch period for an hour and a half each day. 14 parent/caregivers, whose 1st grade children

attend ARCH Ministries after-school program, were asked to complete the survey in regard to their children's food preferences. This study was conducted at these two institutions for two primary reasons: local interest in addressing disparities related to overweight/obesity and my working relationship with staff and administrators in the Arcadia district.³

Administration Procedure

This study was approved by the Wofford College Institutional Review Board (letter attached). I was given permission by Principal Jay Seegars of Arcadia Elementary School to conduct my observations during the students' lunch period. The director of ARCH Ministries helped to introduce me to the parents before I asked if they would like to participate in the survey. The parents were given a summary of the project in English and Spanish and gave oral consent to participate. I informed the parents that the survey was anonymous and that I would not write down their name or their child's name even if they mentioned it while completing the survey. Participants were told that the final report would be available online through Wofford's Digital Commons.

Data Collection and Analysis

Data in regard to food consumption was collected through five days of observational research at Arcadia Elementary School. First, I watched to see what food students chose from the lunch line and recorded this information. Secondly, I watched to see what food students disposed

³ "The Nutrition Now program, a subgroup of the Arcadia Volunteer Corps, provides healthy meals to the students of the ARCH Ministries after-school program. With a budget of approximately \$100 per week, the program has been able to serve health-conscious meals consisting of one fruit and/or vegetable, and on most days a lean protein. This has been achieved with the goal of exposing these first-grade students to healthy foods that they may not be seeing or consuming at home" (Clipper Petroleum Grant Application: Nutrition Now, 2018). The Nutrition Now program started with funding from an MBF staff grant; subsequent funding has been underwritten by a generous grant from the Clipper Foundation and contributions from private donors.

of at the end of their lunch period and recorded this information. Fourteen (14) parent/caregivers whose children attend ARCH After-School Program were surveyed in regard to their child's food preferences and their own perceptions of their child's dietary habits, and I tracked responses on a spreadsheet.

Limitations

This study had several limitations. During each lunch period, I am the only researcher observing student intake of food and food disposal. In addition, I did not observe a full menu cycle, and it is possible that students could prefer some weeks' meals more than others, causing them to discard more food or consume more food on certain weeks. Nonetheless, students tended to consume and discard similar types of food groups each day; there was little variation in what kinds of food were eaten and what kinds were discarded, despite the change of options daily in the menu cycle I observed.

Results

Fourteen (14) parent/caregivers were asked "What does your child like to eat at home?" and "What do you wish your child would eat more often?". In regard to nutritious food preferences of children, three (3) out of the 14 parents said their children liked to eat both fruits and vegetables. Four (4) out of the 14 parents said their children liked to eat fruit. Two (2) out of the 14 parents said their children liked to eat vegetables, but did not list any fruits. Five (5) out of 14 parent/caregivers did not mention that their children like to eat any fruits or vegetables. The particular vegetables listed were carrots, cucumbers, broccoli, green beans, and lettuce. The particular fruits listed were grapes and apples. Nine (9) out of the 14 parents said their children liked to eat processed, starch heavy foods. Children's favorite processed American foods were

fries, pizza, pasta, macaroni, junk food, and other fast food items. Two (2) parent/caregivers explicitly stated that their children preferred to eat American food instead of Mexican food. In response to the second survey questions, 7 out of the 14 parent/caregivers wished their children ate more vegetables. Two (2) out of the 14 parent/caregivers wished their children ate more traditional Hispanic food including beans. A different 2 out of the 14 parent/caregivers would prefer their children to eat more fruit. Three (3) out of the 14 parent/caregivers would prefer their children to eat more seafood and poultry; they specifically named chicken and shrimp.

Children at Arcadia Elementary School were observed during their lunch period for 5 days. The children preferred more processed foods and were likely to throw away fruits and vegetables at the end of each meal. The chart below identifies lunch food preferences of the children;

Food Eaten	Food Discarded
<ul style="list-style-type: none"> • Gold Fish • Sausage Patties • Sandwich Bread • Chicken Nuggets • Tater Tots • Wow Butter & Jelly Sandwich • Tortilla Chips • Corndogs 	<ul style="list-style-type: none"> • Canned Peaches • Celery • Deli Meats • Beans • Corn • Grapes • Carrots • Lettuce • Grits • Broccoli • Pears • Scrambled Eggs • Cauliflower

Very few children brought a packed lunch to school. Packed lunches were normally a Lunchables meal, or some children brought large bags of chips such as Takis. Ice cream is

available to be purchased at lunch, but very few children were seen buying it. Each meal, a large quantity of nutritious food was thrown away by the students.⁴

Discussion

The purpose of this study was to examine possible links between child dietary preferences, obesity, and cultural awareness. Both interview and observational data from this study shows that the majority of children prefer processed foods, while parents wish that their children would eat more lean proteins, vegetables, and foods from Hispanic cultural traditions. The data also shows that although children have healthy meal options provided daily through the District 6 school lunch program, which includes both fruits and vegetables, they tend to choose and eat less healthy options and discard healthy, nutritionally dense foods.

Childhood is an important time for physical development and the establishment of a healthy lifestyle. This can be a difficult challenge due to food neophobia, which is the refusal to eat unfamiliar food and a common trait among young children. Children's "pickiness" and food neophobia are often linked to their limited exposure to an assortment of foods and can lead to minimal consumption of plant-based foods (Scaglioni, et al., 2018). The findings of this study point to a distaste and/or aversion toward nutritious foods among Arcadia Elementary School's students. Although neophobia and food aversion is common, without intervention, children's avoidance of plant-based and nutritionally dense foods puts them at higher risks for diseases related to dietary health, including overweight and obesity, and other health complications in the future.

⁴ There was not a mechanism in place at the school or available for my study for quantitative measurement of food waste. A future study might look at the weight of compostable food waste, including salad bar items and unserved food discarded by cafeteria workers in accordance with food safety protocols.

Arcadia Elementary School's designation as a Title I schools means that the majority of students who are enrolled in the school are from low-income households. Obesity is associated with lower-income neighborhoods due to the potential barriers they may present such as limited access to nutritious foods or minimal areas for physical activity (Science Daily, 2008). Lower socioeconomic status can limit a family's access to healthy foods financially, therefore limiting the children's exposure to many nutritious foods. In addition, the Arcadia community is located in a neighborhood with low access to foods. In the surrounding area, there are a few convenience stores, but no full-service grocery stores; the nearest is three (3) miles away. Additionally, the area is not well connected to public transportation, so the purchase of healthy foods likely necessitates the use of a private vehicle to travel out of the neighborhood. A lower socioeconomic status and residence in a food desert both work towards increasing a child's probability to be overweight or obese (Wilde, Llobrera & Aalpiani, 2012).

Importantly, parent awareness of their child's food preferences was in accordance with the findings recorded from my observations in the lunch room. Parents described their children's tastes for processed foods such as pizza, macaroni, chips, and fast food. Foods similar to these were consumed in the cafeteria when the children had the opportunity to choose what they wanted to eat. During the survey, less than half of the parents listed vegetables as a preferred food. In the lunchroom, children consumed minimal amounts of vegetables. Half of the parents surveyed said that they would prefer for their children to eat more vegetables. This is important because it shows that parents are aware of the benefit of eating vegetables, as well as other items like fruit and lean proteins. Future guidance for these parents/guardians could be given on not only where to find inexpensive vegetables, but how to best incorporate them into their child's diet and encourage their children to eat them.

During the survey, two Hispanic parents vocalized their frustrations with their children's preferences for processed American food, rather than Mexican food. These parents' responses demonstrate the trend of immigrant children to abandon their own culture in order to better fit in among their peers at school (Guendelman, Cheryan, & Monin, 2011; Nguyen, 2007). The assimilation of Mexican immigrant children to American culture, particularly dietary culture, can be very problematic due to possibly creating familial tension around shared meals and decreasing the amount of traditional food made in the house, despite traditional food being better for the children's health (MacArthur, Anguiano, & Gross, 2004; Gray, Bossman, Dodson, & Byrd, 2005).

With regard to meals during school time, it is important to note that the Arcadia Elementary School lunch period is run similarly each day, and that the school participates in the National School Lunch Program which sets nutritional standards for each meal. However, apart from a single bulletin board with minimal stimuli, the lunchroom does not have visuals or signage to encourage children to make healthy choices. When children enter the lunchroom, they are initially directed to the lunch line. As children walk through the lunch line, they have the opportunity to choose from a variety of foods served that day. First, they choose their type of milk: chocolate flavored milk or unflavored fat-free milk. Water is accessible through water fountains, but is not a drink choice at lunch. The children were observed to favor chocolate milk. Next, they choose from three different meals, each of which include a variety of fruits, vegetables, grains, and meats. Children are required to have both fruits and vegetables on their plate each lunch. After passing through the lunch line, each class sits down at their lunch table until they are allowed to go outside. Each day, there is a fresh salad bar including lettuce, peppers, cucumbers, and carrots. Lunch is a short amount of time, and the teachers work

diligently to make sure the children are eating rather than talking. During my five days of observation, the children were often told to settle down and eat their food rather than talking with their classmates. During each lunch period, classes would rotate in and out of the cafeteria in order to maintain a consistent flow of the lunch line and available seating.

Each lunch, the children chose to eat similar food groups and likewise discarded similar food groups. The foods children consistently ate were starches and processed meats such as pepperoni pizza, chicken nuggets, tater tots, sandwich bread, chips, and corndogs. The food students commonly discarded included a variety of fruits, vegetables, and proteins such as beans or eggs. Although the school abides by the guidelines listed for the National School Lunch Program, and even includes a fresh salad bar, children's consumption of nutritious foods appears minimal. These observations are in agreement with another study by Lee, Lee, & Shanklin (2001) which showed that elementary school children who participate in the National School Lunch Program do not always necessarily meet dietary recommendations. In my study as well as theirs, the children primarily chose to eat starchy foods, while discarding those that are nutrient dense and rich in vitamins.

The children's preference for foods made from starches was evident during my observations. Regardless of what was served, the grain portion of the meal seemed to be what was most consumed. For instance, the children were served a warmed ham and cheese sandwich on day 1 of my observations. Instead of eating the whole sandwich, the children would take the sandwich apart, discarding the deli meat and cheese, and only eat the bread. This was seen similarly on day 3 when the children took out the quesadilla filling (chicken and cooked peppers) and only ate the tortilla. It is therefore clear that children's preferences for processed, grain-derived foods were much greater than those of lean protein and vegetables.

During each lunch period, the children discarded large quantities of food. Generally, the children would discard food which had the most nutritional value. However, there were also instances in which the children would discard an entire, untouched tray of food. In order to reduce food waste at Arcadia Elementary School and help decrease the carbon and water footprint associated with food waste, a variety of changes could be implemented. This could include regular teaching and coaching about eating healthily and avoiding food waste; incentives for eating healthy items; a compost system; and/or making menu adjustments throughout the year to swap out menu items that are least consumed.

Arcadia Elementary School not only provides lunch at a reduced price or free of cost for its students, but breakfast as well. Therefore, many children at the school have the opportunity to choose what they will eat for 10 meals each week. Some children also eat dinner at school as part of the after-school program. After observing the students' food preferences, it calls into question whether or not these children understand the importance of healthy food and are equipped to handle the responsibility of deciding what nutrients their bodies consume. If the children eat starches for two meals each day, they lack important nutrients found in fruits, vegetables, and proteins. During the parent surveys, half of the parents expressed the desire for their children to eat more vegetables. If the children are also unwilling to eat vegetables or fruit at home, they are not consuming a well-balanced diet.

Conclusion

Lunchroom observations and parent surveys make evident the popularity of processed foods among elementary school children at Arcadia Elementary. Parents are aware of their children's preferences for foods such as pizza, hamburgers, and chicken nuggets. Nonetheless, parents also prefer that their children eat more vegetables. Schools, and their community

partners, can play an important role in encouraging children to make choices that parents want and that are nutritionally beneficial for children.

During the lunch observations, the children chose to eat foods that were high in starch, and they discarded fruits, vegetables, and proteins. In order to improve the lunch program at Arcadia Elementary School, the district could adopt menu options for cultural inclusion and child food preferences. Since Arcadia Elementary School serves primarily Hispanic students, the menu should include common food from the Hispanic diet, and might include culturally celebratory messaging around particular foods with origins in Mexico and Central America. In addition, since students do not generally consume the healthy options served, and in light of significant District 6 investment for serving more organic farm-to-school food (Orr, 2019), it would be worthwhile to explore ways to increase nutritional education for students and offer fun incentives to eat the healthy food provided. Improving children's eating habits now is not only important for their current physical and emotional state, but for setting the stage for a healthy future and lifestyle.

For parents who are struggling to either find affordable produce or to convince their children to eat fruits and vegetables, it will be helpful to have workshops about both child nutrition and how caregivers can encourage healthy eating for the whole family. At these workshops, parents might learn where they can buy affordable produce; different ways of preparing produce, including in traditional recipes; and how they can involve their children in food preparation at home. Since Latinx families in Spartanburg are also facing the repercussions of American junk food culture, and at least some indicate their children no longer want to eat traditional, Hispanic meals (Keaveny, 2014), it would also be beneficial to have some workshops for parents about cultural preservation and family events that celebrate Hispanic culture and

healthy Hispanic cuisine. Through family events, children would have the opportunity to join with other students who share a similar background. In addition, they would be able to build community and pride in their cultural heritage.

Future studies should investigate the connection between the health of parents/caregivers in Arcadia and their children. In addition, studies should focus on what food families are purchasing weekly for their homes; where this food is being bought; and what barriers (transportation, time, finances) impede regular consumption of healthy foods. It is also important to study what nonfood incentives would be best to encourage children at Arcadia Elementary School to eat their fruits, vegetables, and proteins. Additionally, it is important to ask for parent/caregiver input on food served at the school and inform them of options their child can select. Through work together, caregivers, schools, and partners can shape a healthier future for children in Spartanburg.

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Appendix 1

WOFFORD COLLEGE

Institutional Review Board

September 24, 2019

Laurel Lee

Department of Modern Languages, Literatures, and Cultures

Wofford College 429 North Church Street

Spartanburg, SC 29303

Ms. Lee, Thank you for submitting your protocol for research involving human subjects to the Wofford College Institutional Review Board. Your application entitled "Child dietary preferences: understanding the connection between cultural awareness and child obesity rates in Spartanburg, South Carolina" has been assigned protocol number **2019-9-19-1**. Your IRB protocol and consent form met the qualifications for expedited review. Britton W. Newman, PhD, Member of the Wofford College Institutional Review Board completed the review of the protocol and consent form.

On behalf of the IRB, I would like to let you know that you have met all the requirements and are free to begin recruiting subjects. Please add the IRB protocol number to your consent form and use the number in all correspondence with the IRB regarding this protocol.

If there are any changes to the protocol, please submit them to the board as soon as possible for our review. As you requested, this protocol will be active for 4 months. A request for an extension will be required if you wish to continue to recruit participants beyond this point. Any extension will require you to submit a progress report and a request for additional time and participants as specified in the submission form.

Thank you again for your submission. Good luck with your endeavors.

Sincerely,

Britton Newman, PhD