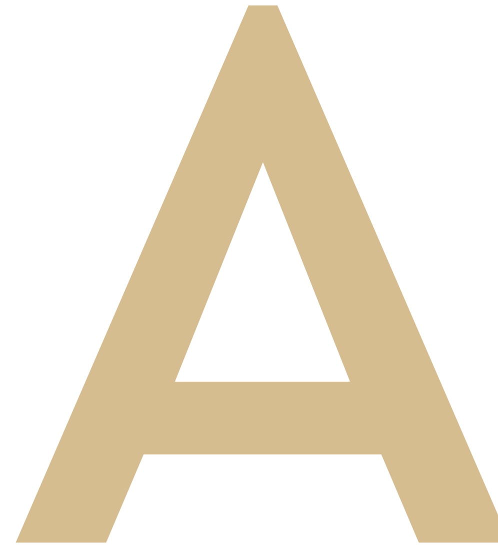
QUALITATIVE ANALYSIS OF CHILDHOOD NUTRITION IMPROVEMENT EFFORTS IN CHARLOTTESVILLE, VIRGINIA

By Alisha Gupta & Stephanie Davis

"In Charlottesville, income inequality, transportation barriers, and the large prevalence of the refugee population make it challenging to effectively prioritize nutrition."

Picture taken by Aubrey Doede.



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ABSTRACT

Background Childhood malnutrition and obesity are heavily correlated with the rising availability of low-cost, high-calorie, and nutrient-poor foods. Nationally, over 12 million children (aged 6-19), or approximately 20% of all children, are obese. More specifically, in Charlottesville, Virginia, the prevalence of overweight and obese children has remained at 35% throughout the past decade. In order to address local childhood obesity, the Charlottesville food justice network (CFJN) collaboratively works to identify the opportunities and barriers to accessing healthy nutritious foods for community residents. **Methods** Researchers conducted 11 semi-structured interviews with CFJN professionals to determine overlapping barriers across both individual and community efforts in Charlottesville. The interview data was coded and analyzed using thematic analysis. **Outcomes** Qualitative data suggested that the most common challenges professionals see in Charlottesville revolved around children's behaviors and perceptions of foods, food literacy issues, program planning, societal influences, and socioeconomic factors.

KEYWORDS

Nutrition, Obesity, Children, Charlottesville, Food Literacy, Income Inequality

INTRODUCTION

Childhood malnutrition and obesity have become increasingly correlated with the rising availability of low-cost, high-calorie, packaged, and nutrient-poor foods. Nationally, over 12 million, or one of every five, children (aged 6-19) are obese.[1] More specifically, the prevalence of overweight and obese children in Charlottesville, Virginia, has remained at 35% throughout the past decade.[2] In turn, the rising rates of childhood obesity contribute to increased risk for chronic diseases such as asthma, diabetes, and heart disease.[3]

While a child's genetics and metabolism are contributing factors to obesity, studies show that genetics only account for 20-30% of an individual's health status.[4] This indicates that other influential factors, such as socioeconomic background and eating behaviors, are significant aspects in determining a child's health status.

Previous data collection on this topic includes university students' research on the effects of Michelle Obama's healthy school lunch initiatives at Johnson Elementary School in Charlottesville, Virginia. They conducted numerous waste audits to measure discrepancies in what children were placing on their tray versus what they were actually consuming. However, attempts to change the cafeteria menu proved unsuccessful due to budgetary and bureaucratic constraints.

Using this data as a baseline, our research team worked to implement behavioral and procedural changes that would be of zero cost to Johnson Elementary. We revised an age-appropriate "Salad Sensation" form to encourage students to order a salad each morning. However, due to the limited flexibility in food preparation, minimal resources, and research restrictions, it was difficult to implement further tangible changes. For this reason, we looked towards community efforts to assess other barriers that professionals face in improving child nutrition.

The CFJN includes over 20 organizations that are working to change eating habits and behaviors. While our team identified numerous strategies to improve child nutrition, the largest community efforts in Charlottesville stem from food pantries, public cooking classes, community gardens, and schools. Due to the high diversity in organizational approaches, this research strives to bring light to the overlapping challenges that all CFJN professionals have experienced. In addition to the barriers of healthy eating, this research similarly found overlap in the strategies already being implemented.

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Researchers sought to collaborate with members of the CFJN to identify the most effective measures to improving child nutrition.

METHODS

This qualitative research study took place from October 2017 to January 2017 at the University of Virginia (UVA) Department of Global Development Studies. Participants who work professionally in the food justice sector in the city of Charlottesville were recruited through email. Eleven people participated in semi-structured phone or in-person interviews which were coded and analyzed using thematic analysis. The study was approved by the UVA Social and Behavioral Sciences Institutional Review Board (IRB).

Recruitment

Participants were recruited based on their expertise in the Charlottesville food-justice sector. Researchers, based in Charlottesville, Virginia, conducted interviews from their homes or traveled to the participant's office when scheduling permitted.

Thirty-one potential participants and organizations that worked either directly or indirectly to improve child nutrition in Charlottesville were asked if they would be willing to participate in the study. They were contacted by email with an IRB-approved message, followed by an interview that took place over the phone or in-person. All e-mails after the initial contact were personalized in order to schedule the interview. Interviews were scheduled with the first eleven that volunteered to participate; two declined to participate; and no other responses were received.

Data Collection

Researchers conducted eleven semi-structured interviews: nine by telephone and two in-person. Interviewees were led through a series of ten questions, each in one of three broad sections: background of their professional role, child nutrition in the Charlottesville community, and childhood nutrition on a larger scale. Interviews lasted approximately 25 minutes. Each interviewee provided consent to the interview and was offered full confidentiality of responses and de-identification. Five participants preferred to be de-identified.

Each interview was conducted by one researcher and transcribed by the other primary researcher to ensure maximum exposure and review by the research team. Researchers used Quicktime audio recording software on their laptops to record the interviews and immediately uploaded the audio files onto a secure server.

To ensure confidentiality, names and other identifying information of the five participants were removed from transcriptions and replaced with a false name.

Data Analysis

In order to compile an exhaustive and consistent analysis of the participants' interviews, researchers used thematic analysis to analyze the transcriptions. As one of the most commonly used methods in qualitative research, thematic analysis involves identifying, organizing, and extracting meanings and concepts to record and report themes from the data set. According to Braun and Clark, this allows researchers to identify the different perspectives of participants, highlight similarities and differences among responses, and generate complex insights.[5]

Both researchers coded each interview independently according to thematic analysis and then compared individual codes. After this process, the research-

ers created five common themes and subcategories through consensus building. The researchers collaborated on the placement of a code under a theme if a particular code did not clearly fit a category.[6]

Establishing Trustworthiness

To ensure trustworthiness of the study, researchers debriefed after the first interview conducted to discuss areas of improvement in the semi-structured guide. One researcher conducted the interview and the other researcher transcribed it so both researchers had an understanding of each participant. Throughout the coding and analysis process, researchers discussed the codes extracted from each interview to ensure agreement. Researchers clearly documented each phase of the study and followed a consistent methodology throughout the study.

Positioning

Both researchers are Master's students at the University of Virginia. Throughout the past two years, both researchers have been heavily involved throughout the Charlottesville community through undergraduate research, Madison House, and the International Rescue Committee. Through Jefferson Public Citizens and research positions, they have both performed qualitative and quantitative studies prior to conducting this project. One researcher had conducted semi-structured interviews previously. To avoid personal bias, researchers discussed their opinions prior to the study (e.g., effectiveness of Michelle Obama's initiatives) to identify points in the interview guide that may reflect biased questions.

OUTCOMES

Participant Demographics

The roles and backgrounds of the participants spanned a wide range, including the non-profit, academia, and private sector. Their work indirectly and directly affects childhood nutrition; ranging from an individual to the community level. Figure 1 shows specific roles and their correlating areas of work.

Themes and Categories

Data were arranged into five broad themes: child behavior and perceptions of food, food literacy, program planning

Picture taken by Aubrey Doede.

Name	Role	Organization
Allison Smith*	Associate professor of kinesiology, registered dietitian nutritionist	Public University*
Barbara Yager	Health and wellness consultant	City of Promise
John Doe*	Operations director	Local non-profit*
Jane Mills	Executive director	Loaves and Fishes Food Pantry
Megan Brown*	Chief of staff	Local non-profit, food supplier*
Patricia Williams*	Registered dietician	City hospital*
Paul Freedman	Associate professor of politics	University of Virginia
Rachel Miller*	Residence service coordinator	Public community housing organization*
Ryan Jacoby	Executive director	PB&J Fund
Trey Holt	Chief and director of kitchen	St. Anne's Belfield School

Table 1. Specific roles and their correlating areas of work. *Name and correlating organization has been changed to protect the participant's privacy.

and management, societal influences, and socioeconomic factors.

Theme 1: Child Behavior and Perceptions

CFJN members discussed effective and ineffective measures for influencing a child's willingness to eat healthy alternatives. Participants argued that there must be a "positive association with food" (Smith). Drawing from their responses, the largest influences on a child's perception of food was whether or not they had seen the food before in a familiar setting (i.e., at home or among peers), whether they had seen their parents eat the food, and if they assisted in the preparation of the meal themselves. For example, a child who assisted a parent in choosing a vegetable from the garden was more likely to consume the food later.

In order to improve the consumption of healthy alternatives, participants strongly advocated for community gardens and a hands-on approach to food preparation. Trey Holt, the chef at St. Anne's-Belfield School, believes that this builds "a certain amount of trust" between the child and the food in question. Successful interventions in the Charlottesville community include City SchoolYard Garden and Harvest of the Month, which focus on incorporating locally-grown fruits and vegetables into the student's school day.

However, measuring effectiveness among programs remains difficult. At the Blue Ridge Food Bank, families are provided with various meals, but there is no way to measure what food and how much is being consumed once it leaves the food bank. Nonetheless, participants expressed the importance of recognizing that our dietary and nutrition be-

havior is a learned process. In turn, "if we do not offer healthy foods to children, then we cannot be surprised or disappointed when children don't eat healthy foods" (Smith).

"A child who assisted a parent in choosing a vegetable from the garden was more likely to consume the food later."

Theme 2: Food Literacy
Even if an individual is provided with healthy alternatives, "if you don't have the time, or the knowledge, or the equipment, or the skills to prepare [the food]" then the effect of increasing exposure to healthy foods will be minimized (Freedman). Paul Freedman, a professor at the University of Virginia, recognizes that "cooking is empowering;" however, an individual must first have the skills and knowledge on how to prepare various foods. One initiative is Charlottesville's PB&J Fund which offers cooking classes for local children. This exposes children to various foods, and also provides them with the skill set to prepare the food once they return home. Other organizations, such as Loaves and Fishes, has found success in having a nutritionist come in weekly to prepare meals for the families to sample (Mills).

However, while knowing how to cook and prepare the food is an essential component to addressing child nutrition, Mills stresses that understanding why one should choose these healthier options in the first place is crucial. Without being exposed to adequate food literacy, individuals might not perceive healthy eating as an issue and in turn may not feel motivated to incorporate healthy eating into their daily diet. This information gap is also closely associated with economic and social barriers, which will be explored in a later section.

...es taken in Virginia. By Johnson Elementary School.

Picture taken in Virginia. By Jean Nunez

Picture from https://www.publicdomainpictures.net/pictures/60000/velka/blue-ridge-

Program Planning and Management
Program planning and management serve as the backbone for facilitating healthy eating habits. However, funding and regulations serve as roadblocks for many organizations. While there has been a shift away from processed foods and towards fresh local produce, the "quantity doesn't reflect the quality of what the children are getting" and noticeably, "the food they are getting for free is not the most nutritious" (Miller).

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One participant notes that their partnership with a local food bank limits the flexibility of the meals they can provide to the children because pre-set menus often limit the nutrition and diversity of foods served. In addition, the food bank's goal is to serve the highest quantity of children each day. To achieve this, a child is given an entirely new tray when they ask for more food even if they only want seconds of one food item (e.g., applesauce); in turn, the rest is wasted.

The food bank is also restricted in the options that they can provide due to budgetary and regulatory restrictions. Holt discusses that Charlottesville schools offer an ideal environment to influence children's eating habits and "reinforce that this [healthy eating] is what they should be thinking about." However, funding and bureaucratic regulations serve as hurdles for addressing child nutrition in this setting. For example, it is difficult to acquire funding to purchase healthier snacks in the vending machines or to fund a salad bar in the cafeteria (Williams).

Additionally, there is the fear that if funds are spent on healthier alternatives, such as a whole wheat pizza, then the students won't consume the food, amounting to more waste. This reinforces the need for more exposure and improved food literacy, but also the need for consistency. Programs that introduce a food item once may succeed in prompting a child to try the food; however, children will likely need to try that food 15-20 times to form a habit or preference. Therefore, program management must go both ways: it has to remain consistent while simultaneously incentivizing children to eat healthy.

In order to strengthen program management targeting nutrition, Holt emphasizes systemic and sustainable models. If the model is not systemic, then when that person leaves or resigns from office, "everything reverts back to what's convenient" until another person is found who is willing to revamp the work (Holt). For example, when Michelle Obama held the position of First Lady, her healthy eating initiatives and programs were at the forefront of her platform; however, with the past elec

tion, discussions surrounding childhood nutrition have faded.

Lastly, Jacoby, from the PB&J Fund, emphasizes the “partnership model,” claiming that they have found their success primarily through partnerships with other community non-profits. This means that kids and families are coming from other organizations where they may already recognize one another. This builds an “instant relation of trust” and “creates a space that feels safe, where they can learn and feel empowered” (Jacoby).

Societal Influence
An additional theme that emerged included societal influences on a child’s behavior towards food, primarily from food marketing companies. For example, commercials and engaging advertisements are influential in increasing the social desirability of foods.

Patricia Williams, a registered dietician, acknowledges that the media often increase the desirability of processed and packaged foods, prompting children to “ask mom and dad for [it] because they saw it on TV” (Williams). As a result, food marketing strengthens a child’s resistance when professionals try to contest these widely accepted, positive notions of society.

Peer influence also impacts a child’s food preference. If peers choose unhealthy foods or certain foods are made to be perceived as more socially desirable than others, children will be inclined to choose what their peers are eating because they fear being excluded from the social norms.

“The farmer's market is just a space where low-income people tend not to feel welcome among class and racial lines.”

Lastly, the media has also created an image to perceive unhealthy foods as “more fun.” Freedman recognizes:

> “If you take kids that are used to their chocolatey, sugary, yummy, packaged, and easy to eat but also not very healthy foods, you need to make real efforts to figure out how you are going to get them to eat it...because a lot of people have found ways to make a lot of money by convincing kids that food is supposed to be fun.”

With children preferring or expecting an association between “fun” and food, community organizations in Charlottesville are now struggling to reach children in a fun, yet effective, way.

Socioeconomic Status
Socioeconomic status emerged as the most influential barrier in healthy eating. In Charlottesville, income inequality, transportation barriers, and the large prevalence of the refugee population make it challenging to effectively prioritizing nutrition. Overall, 22.8% of the Charlottesville city population remains under the poverty level.[7] As John Doe discusses:

> “what we know looking at census data and in the areas we are working, incomes are low, food stamp usage is high, and you can extrapolate that there will be a health impact in providing free, fresh healthy food.”

In turn, the CFJN has specific programs assisting this population to help mitigate the daily stressors they may experience: managing multiple jobs, time constraints, financial costs and providing basic meals to their children. Community organizations recognize that cooking nutritious meals requires time and costly ingredients. Smith suggests:

> “Due to the economical situations, working more than one job has a huge effect on the time and the money available for food... it is just not a reasonable assumption that the caretaker has enough time to go shopping and then prepare food from scratch with fresh ingredients every day.”

Transportation remains a barrier around the city as well. Although Charlottesville has the Charlottesville Area Transit system, scheduling and convenient bus stop locations remains an issue. Miller recognizes that “at the end of the day, it’s hard to get groceries when you’re so far away and a gas station is right down the road.”

Because of the surrounding farmland, Charlottesville city markets offer fresh vegetable options. While some farmers markets tend to be physically accessible and take food stamp payments, Miller acknowledges that “the farmer’s market is just a space where low-income people tend not to feel welcome among class and racial lines.”

Because of the large wealth gap in Charlottesville, negative stigma towards lower income populations is a contributing factor of access to healthy eating.
Lastly, Charlottesville remains a large hub for refugees. Organizations such as the International Rescue Committee provides access to housing, education, and healthcare services. The barrier to healthy eating, however, remains in providing culturally appropriate foods. Because of the diverse backgrounds, organizations must account for different diets and provide appropriate foods to these families. Jacoby also signifies that the PB&J Fund does “a really good job of not imposing [their] notions of what food security means, [they] try to sort of meet everywhere where they are.”

“ At the end of the day, it's hard to get groceries when you're so far away and a gas station is right down the road.”

CONCLUSION

Summary of Key Findings
Our findings suggested five main conclusions. Primarily, organizations in the CFJN are continuing to emphasize the importance of exposure to healthy foods, a key component in a child’s behavior towards healthy eating. Hands-on approaches are increasingly found to be important for children to develop positive connections with healthy foods, as well as closing information gaps through educational programs. These programs, however, must be consistent and targeted towards the audience to account for variations in socioeconomic status, age, and education level. In particular, the CFJN has found the media to be a source of resistance in reaching children and has created an illusion of necessitating healthy food to be produced in innova-

tive and fun ways. And lastly, the Charlottesville City layout challenges families without transportation and time to travel across town to reach a grocery store.

Future Recommendations

Our participants alluded to several ways to improve the current initiatives targeting child nutrition in Charlottesville. For example, while participants reflected on the influence that community initiatives held, the funding required for program continuation and consistency often flows from the top (i.e., government initiatives and state budgets). Therefore, further collaboration on multiple levels of power is needed to increase buy-in at both the state and local level. Once these budgets are obtained, it is crucial to identify the "incentive for adults to serve it and kids to eat it" (Paul Freedman).

Integrating a hands-on approach appeared to be the most supported argument for increasing this food consumption among participants. However, understanding the avenues in which these efforts can be facilitated to ensure equity and sustainability are essential. Going forward, Smith prompts the community to redefine their perception of success:

> "The more options we give, the more we increase the likelihood of at least some children adopting the healthier diet. But what if 10% of those children who took the vegetable actually ate it, would you say that was success? Or would you focus on the 90 who didn't?"

Focusing on sustainable initiatives and providing "nudges" is the right direction, while simultaneously improving upon food literacy, is necessary to assist parents, school administrators, and community partners in understanding the scope of the issue and the need for intervention.

At Johnson Elementary, 66.2% of students are on free and reduced lunch,[8] and it serves as an example of just one of the many public schools in Charlottesville where there is ample room for positive "nudges" to be implemented. The goal of this research was to identify current initiatives working to overcome the barriers of health that facilitate childhood obesity. By recognizing the overlapping efforts, future partnerships among the CFJN would increase the strength, resources, and quantity of children reached.

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