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**Parental Engagement To Influence Child Nutrition Habits**

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### **Abstract**

Brighter Bites Salinas is a non-profit agency whose mission is to create healthy communities through fresh food. They do this by providing nutrition education to children and delivering free, fresh produce to parents. In the United States, obesity and food insecurity are common, intertwined issues among children. The contributing factors to these entangled issues are associated with living in poverty, acculturation of minority groups, and negative parental influence. The consequences of this include increased risk of chronic diseases, high-cost treatments, and mental health issues. This capstone project was created to positively engage parents in nutrition education to influence their children's eating habits. Weekly nutrition education, recipes corresponding to the weekly produce donation, and direct access to the Brighter Bites mobile app were distributed. An assessment of the project concluded that the goals had been met. The next step for the agency includes the continual promotion of Brighter Bite's educational resources.

*Keywords: childhood obesity, food insecurity, nutrition education, parental influence, Brighter Bites*

### **Agency and Communities Served**

Brighter Bites is a non-profit organization whose mission is to create communities of health through fresh food (Brighter Bites, 2022). The Salinas cohort has been serving Monterey County since 2021. The agency's vision seeks “to improve the health outcomes of children and families in under-resourced communities by using data-driven, evidence-based strategies to provide fresh produce and nutrition education” (Brighter Bites, 2022). The program executes its vision through collaboration with school principals, teachers, community volunteers, and local produce donors.

Brighter Bites Salinas serves roughly 1600 families in Monterey County elementary schools and Head Start programs to teach children how to create healthy food habits at an early age (A. Blanco, personal communication, May 3, 2022). Providing access to fresh fruits and vegetables and teaching families how to use them will help mitigate the risk of childhood obesity and other obesity-related diseases most prevalent in low-income, marginalized communities.

### **Problem Model Background and Literature Review**

#### **Problem Description**

Obesity and food insecurity remain intertwined issues among school-aged children in the United States. According to Tester et al. (2020), these two issues commonly coexist, and each contributes to its share of health and social consequences. The World Health Organization (2021) defines obesity in children and adolescents aged 5-19 as greater than two standard deviations above the World Health Organization Growth Reference median. According to Orr et al. (2020), food insecurity occurs when access to food is consistently inadequate. To optimally mitigate the consequences of both issues, interventions need to provide strategies that simultaneously address both problems (Tester et al., 2020). For example, food needs to be provided to address food

insecurity, while the type and quantity of food will need to be altered to address obesity (Tester et al., 2020).

Monterey County has the fourth highest prevalence of childhood obesity in the state, with 46% of children considered obese (Natividad, 2020). Recent data from Feeding America (2021) shows that 15% of children in Monterey County are food insecure. The nationwide non-profit organization Brighter Bites' mission aims to mitigate the effects of the entangled existence of obesity and food insecurity. Their program provides nutrition education to children, accessible learning materials to parents, and the physical resource of fresh fruits and vegetables delivered free of cost to participating schools on a biweekly basis. To qualify for the Brighter Bites program, eligible schools must have at least 80% of attending students eligible for free reduced lunch (A. Blanco, personal communication, February 22, 2022). This means that a family of four would have to make below \$35,000 per year (California Department of Education, 2021). Unfortunately, many of Brighter Bites Salinas's participating schools contain well above the necessary 80% of qualified students (A. Blanco, personal communication, February 22, 2022).

### **Contributing Factors**

Several contributing factors exacerbate the risk of children becoming obese or food insecure. Poverty has been shown to increase the risk of low-income families' predisposition to nutrient deficiencies and an unideal diet (Tester et al., 2020). One reason for this may be the higher per calorie cost of fresh fruits and vegetables compared to calorie-dense unhealthy foods. According to Tester et al. (2020), microwavable and frozen foods are usually the more cost-effective option for households living in poverty. An additional reason poverty contributes to this risk includes the limited amount of easy to access, well-stocked grocery stores near low-income neighborhoods (Tester et al., 2020). According to Tester et al. (2020), the

neighborhood may be considered a food desert when produce and whole grains are difficult to access based on location or cost. In addition, they stated that many of these same neighborhoods might be saturated with fast food options and convenience stores, making unhealthy foods much more readily attainable than fresh foods. These areas are known as "food swamps" (Tester et al., 2020).

Acculturation of minority groups place them at a disproportionate risk for obesity and food insecurity (Chatham & Mixer, 2019). A study by Brown et al. (2019) on research gaps in obesity and food insecurity found that the food insecurity prevalence was much higher in Hispanic and Black populations and even higher in those populations whose households contained children. Chatham and Mixer (2019) found that children of Hispanic immigrants are at a significantly disproportionate risk. This increased risk was found to be influenced by acculturation, as children are immersed in an obesogenic environment such as a school (Chatham & Mixer, 2019). The research done by Chatham and Mixer (2019) distinguished that these children had increased rapid weight gain during the first five years of elementary school compared with children of non-immigrant Hispanics.

Negative parental influence is another factor that highly contributes to a child's risk due to the intergenerational transmission of obesity (Vittrup & McClure, 2018). According to Vittrup and McClure (2018), children are at the mercy of the food provided to them by their parents or caregivers before adulthood. They stated, "In addition to feeding their children, and thus, deciding what their children eat, parents also model eating behaviors, exercise habits, and attitudes toward food and exercise, and they make decisions about their children's activities" (Vittrup & McClure, para 2). Because of this, children's eating patterns are easily influenced by parental behaviors. For example, a study by Orr et al. (2020) demonstrates the connection

between the influence of parental feeding behaviors and an increase in childhood obesity. The study showed that parents in a food-insecure household were more likely to use pressuring behaviors to avoid wasting food. This pressuring behavior has been found to influence children's eating behaviors and ultimately put them at an increased risk of obesity.

### **Consequences**

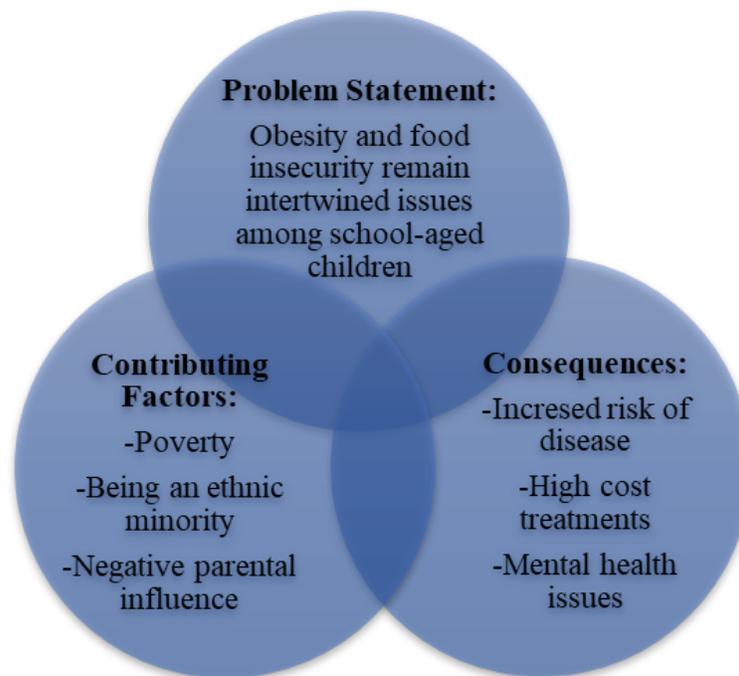
There are several severe consequences that obesity and food insecurity have on school-aged children. The first includes the increased risk of the many diseases associated with obesity. Childhood obesity is linked to an increased risk for many chronic diseases such as type 2 diabetes, coronary artery disease, several types of cancer, and ischemic stroke (Fang et al., 2019). A study by Bjerregaard et al. (2018) found that children with higher body mass index, even when the levels are below what is considered overweight, have been found to have an increased risk of type 2 diabetes as adults. Brown et al. (2019) linked food insecurity with adverse health outcomes such as cardiometabolic disease, diabetes, asthma, and anemia.

Another consequence of childhood obesity and food insecurity is the high-cost treatments associated with these issues. According to Chu et al. (2018), in 2010, each obese male individual living in the United States spent roughly \$2646 on medical expenses, while their female counterpart spent approximately \$4879. De Lorenzo et al. (2020) stated that in 2016 more than \$1 trillion was spent on obese and overweight individuals' medical treatments at the national level. This equated to 9.3% of the gross domestic product. The study on the economic consequences of obesity by Chu et al. (2018) found that the indirect cost of type 2 diabetes-related treatment was the priciest of all the obesity-related medical expenses. They also found that obese individuals are charged with higher healthcare premiums due to stigmatization and poorer health status. For example, they explained that the healthcare costs for obese and

overweight individuals while treating hypertension, type 2 diabetes, high cholesterol, stroke, and coronary artery disease, was at least \$4400 higher than the costs for those with an average weight.

Mental health issues such as depression, anxiety, ADHD, and low self-esteem are disproportionately prevalent amongst obese and overweight children. According to Sagar and Gupta (2017), these psychosocial problems are detrimental to children's well-being and, ultimately, their quality of life. They stated that obese children are more susceptible to bullying and discrimination, negatively impacting their emotional development. A study by van Vuuren et al. (2019) found that obese and overweight adolescents reported suicidal ideation and psychosocial issues more often than their normal-weight peers. The study showed this was significantly higher in those victimized because of their weight. This social damage leads children to social isolation, which correlates to additional unhealthy behaviors such as physical inactivity and excessive food intake (van Vuuren et al., 2019).

### **Problem Model**



### **Project Description and Implementation Process**

#### **Project Description**

This Capstone project addresses parental nutrition knowledge and interest in positively influencing children's nutrition habits. This is a critical factor to address since parents both provide food to their children and have the most significant influence on the habits their children adopt. The project encouraged parental nutrition knowledge by engaging parents with educational healthy learning opportunities and promoting healthy cooking in the home.

A promotional table was set up on-site for three consecutive weeks at La Gloria Elementary's produce distribution event. This table included colorful chalkboards with a written bilingual description of the week's health topic. Each week, I distributed bilingual recipe cards corresponding to that week's produce donation and flyers to teach parents something new about nutrition. I also provided a sample recipe to entice the taste buds and show that healthy food can also be delicious. It was essential to include these tangible resources as many families do not

have access to technology. For those with smartphone access, a QR code was made available to give parents an easy opportunity to download the mobile app. The app contains many tangible resources such as educational materials, healthy recipes, and tips and tricks for getting kids to eat more fresh fruits and vegetables. Promoting the already developed resources for parents encouraged them to learn more about adequate nutrition and allowed them to make more educated choices when it comes to feeding their children and themselves.

### **Project Justification**

The study done on parental knowledge and attitudes on obesity by Vittrup and McClure (2018) found that most surveyed parents could not define what a healthy diet consisted of and did not know how to determine portion sizes for their children. Most parents based the serving size on how much their child could eat, and only 10% used a nutrition label to follow the serving size suggestions (Vittrup & McClure, 2018). The study found that very few parents attempted to control their child's weight. These same parents did not understand the definitions of "overweight" versus "obese" or the risk factors associated with each (Vittrup & McClure, 2018). One of the most alarming findings from this study concluded that many parents with overweight or obese children did not acknowledge this as accurate (Vittrup & McClure, 2018). Vittrup and McClure (2018) suggested that school initiatives to educate parents on these specific topics can help close the gap of uncommunicated information between families and medical professionals.

### **Project Implementation**

The timeline of the project began on February 8, 2022. The initial task included a needs assessment meeting with the Brighter Bites Vice President of Operations and the Senior Manager of Programs. During this meeting, we discussed the current needs of the organization and ways in which I could help further the agency's mission through the project. After the needs

assessment meeting, I conducted a planning meeting with the Program Director and Program Coordinator to discuss the implementation process and which school had the greatest need for the services.

After this planning meeting, I spent the last two weeks of February devising the promotional resources used for the project. First, I explored the numerous educational materials provided on the Brighter Bites app and hand-selected three that I believed would be the most valuable and interesting to the parents at La Gloria Elementary. I then scanned through hundreds of Brighter Bites healthy recipes to select two for each week that corresponded with donated items for the respective weeks. I then collaborated with the FedEx Printshop and printed all of the project's materials.

The project implementation began on March 2, 2022, and ran every other Wednesday until April 13, 2022. The interview to assess the effectiveness of the project coincided with the last date of implementation. After the conclusion of the project and interviews, a week was spent analyzing the responses to determine the effectiveness of the project.

### **Project Results**

The expected outcome of this project was to increase participating parents' desire to learn about nutrition-related topics by utilizing the many resources that Brighter Bites has on their mobile app and website. In turn, parents will ultimately begin to make healthier, better-informed food choices for their children and themselves while simultaneously positively influencing their child's nutrition habits. The expected outcome for the agency was furthering its mission to create communities of health through fresh food and education.

The assessment plan required parental feedback to measure the success of the project. A bilingual volunteer and I distributed a questionnaire to twenty parents and verbally interviewed

all others who passed by the table to gain this feedback. This assessment process occurred on the last implementation day during the school's on-site distribution event. Parents were asked questions about their interest in the weekly resources, if they had made any of the previously handed out recipes, and if they had since utilized the mobile app for more information. These questions helped evaluate the success of the project. This success was based on 50% of the interviewed parents answering "yes" to any of the questions. These criteria determined that the project has achieved its desired outcome by successfully engaging parents.

The project results concluded that the implementation process successfully reached its desired effect. The assessment indicated that 89% of the interviewed parents found the weekly resources informative and interesting; 84% had made at least one of the recipes distributed in previous weeks, and 58% had since checked out the mobile app for additional information and resources. I also logged how many parents scanned the QR code to download the app each week. After the final day of implementation, 7% of the parents who came to the table downloaded the app directly to their phones.

### **Conclusion & Recommendations**

Brighter Bites' efforts have made notable contributions to reducing the prevalence of obesity and food insecurity within the under-resourced communities they serve. The emphasis put on teaching children about nutrition from a young age has proven to be successful by encouraging children to make healthy, informed choices for themselves. The largest area of improvement revolves around spreading that emphasis to include more educational engagement for parents. My recommendation for the agency moving forward is to continue to promote the readily available educational resources to parents during produce distributions by supplying healthy recipes, educational weekly topics handouts, and meal samples. The majority of the

parents who participated in the project found Brighter Bites' resources interesting and were encouraged to try healthy recipes due to the promotion of these materials. This success shows that continuing this project can aid in furthering the mission and vision of Brighter Bites.

### **Personal Reflection**

My time with Brighter Bites has given me hands-on experience working with diverse populations and allowed me to witness the disproportionate health effects of marginalized communities personally. In addition, working with these communities has allowed me to practice cultural humility by learning a new language to better connect with the people I serve and has inspired me to continue advocating for equity in my future career to decrease these health disparities. I hope that our future includes a world where all people, regardless of income, race, and ethnicity, can live a life of quality by making informed, healthy choices for themselves. This would mean gaining equal access to health education, healthy foods, health care, and a non-toxic environment where all populations can thrive.

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**Appendix**  
**Scope of Work**

Parental Influence on Children's Nutrition  
Capstone Timeline

<b>Task</b>	<b>Timeline</b>	<b>Parties Involved</b>	<b>Materials/Services Needed</b>	<b>Completed Product</b>
Discuss organization needs	Feb 8	Intern, Vice President of Operations, & Senior Manager of Programs	Brainstorming meeting	Ideas for project finalized
Attend planning meeting	Feb 25	Intern, Program Director, & Program Coordinator	Zoom link set up, meeting agenda	Task assignment, project support
Research healthy topic of the week resources	Feb 25	Intern, Program Coordinator	Brighter Bites app and website	Gained four weeks worth of resources for project
Gather materials needed for implementation	Feb 28	Intern, Program Director	Chalkboard, Fedex Print Shop	Hard copy flyers, recipe cards, and QR code
Project Implementation	March 2- April 13 (every other Wednesday at La Gloria Elementary)	Intern, Program Director, & Program Coordinator	Chalkboard, Hard copy handouts, QR code	Promoted app and resources to families
Create 3-4 question questionnaire for	April 13	Intern	Word doc, and translator	Interview questions to assess if the

interview				promotional materials were useful
Interview parents at final implementation	April 13	Intern, volunteer, parents	Face to face	Interviewed all parents that we came into contact with
Program evaluation/analyze outcomes	April 13	Intern	Analyzing questionnaires and feedback	Knowledge of what worked and what could have been done better