

TEACHER PERCEPTIONS OF NUTRITION EDUCATION IN EARLY CHILDHOOD  
EDUCATION IN ONE PRIVATE CENTER IN THE SACRAMENTO REGION

A Thesis

Presented to the faculty of the Department of Graduate and Professional Studies in  
Education

California State University, Sacramento

Submitted in partial satisfaction of  
the requirements for the degree of

MASTER OF ARTS

in

Child Development

by

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SUMMER  
2020

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by

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Abstract  
of  
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Childhood obesity remains a concern in the United States. Educational programs have been established to address and prevent childhood obesity. Teachers are at the forefront of helping to define and establish nutritional best practices for young children and are key in laying the foundation for building healthy choices, to spread awareness through knowledge and training, to role-model, and to promote healthy options and exercise. However, such curricula and policies have mainly been established in K-12 education. Less attention has been given to Early Childhood Education (ECE) settings.

The objective of the study was to further investigate early childhood educators' knowledge and perspectives of the role of nutrition education in early childhood in one private NAEYC accredited ECE center in the Sacramento region. Furthermore, this study addressed the following research questions: (a) What do teachers know about nutritional guidelines in early childhood education? (b) What are teacher's beliefs about their role in nutrition education and children's nutritional habits? and (c) What are teacher's beliefs and practices of nutrition education?

Twelve teachers participated in one of two focus group interviews. The focus groups were guided by a semi-structured interview protocol. Participants were asked about their knowledge of ECE nutritional policies and guidelines, their beliefs about their role in nutrition education, and their practices in the classroom to educate children about nutrition. The results indicated teachers were knowledgeable of nutritional guidelines of the school site, but not of the broader governmental guidelines. Teachers' beliefs about their roles and responsibilities differed based on the age group taught. However, all teachers felt that exposure, modeling nutritional behaviors, and focusing on promoting healthy choices were best practice. The delivery of nutrition education was primarily done in two different ways: through specific nutrition-themed curriculum and through daily conversations around nutrition during mealtimes, play time, and curricular times. Overall teachers felt that they played a significant role in the children's dietary habits and that nutrition education opportunities were needed to support higher-quality nutrition education in early childhood.

\_\_\_\_\_, Committee Chair  
Patrick Pieng, Ph.D.

\_\_\_\_\_  
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## ACKNOWLEDGEMENTS

First off, I would like to thank my fellow graduate students who have become my lifelong friends. To Kerra, my accountability buddy, I will cherish all the coffee and library days we spent together, making sure we accomplished what we started back in 2015. Although the quarantine stopped us in the final days, your motivation and determination to not let me give up, I am forever grateful to you.

I want to express my deepest gratitude to my committee chair, Dr. Patrick Pieng, who has spent countless hours guiding me throughout this process. Who has watched me grow as a writer and researcher, encouraged me and believed in this study even when the road got tough. He continually challenged me, guided me, and pushed me to think critically. I also want to express my appreciation for my second reader, Dr. Sheri Hembree, for her continued patience, feedback, and guidance throughout this entire process. Without both of their direction, patience and persistent help, this thesis may not have come to fruition.

Finally, the people who have always been my cheerleaders: My Family! There is nobody more important to me than you all. Mom, Dad, Daniel, Megan, and Aaron, your love and support through this journey has made this all possible. To my in-laws, your early investment in my education, I hope, has been worth it. I am forever grateful for all your continued support in my education and your encouragement over the years. To Eric, your tremendous support, inspiration, and love motivates me to do better every day. I'm grateful to call you my best friend and husband. I love you all.

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## Chapter 1

### INTRODUCTION

In recent decades, obesity has remained a growing concern in the United States. A recent study suggested the rates of obesity may have stabilized in past years; however, obesity remains prevalent, especially in childhood (Larson, Ward, Neelon, & Story, 2011; Ogden, Carroll, Kit, & Flegal, 2014). Currently, approximately 17% of U.S. children between ages 2-19 years fit the benchmark for being overweight or obese (Huang, Lanza & Anglin, 2013; Ogden et al., 2014; United States White House Taskforce on Childhood Obesity, 2010). As a result, children are at a higher risk of developing long-term health-related issues such as type II diabetes, asthma, and childhood hypertension which can subsequently follow into adulthood (Center for Disease Control and Prevention, 2011; Gonzalez- Suarez, Worley, Grimmer-Sommers, & Dones, 2009; Reilly & Kelly, 2011; Tyson & Frank, 2018). In addition to adverse long-term health-related risks, obesity-related management also sustains economic losses. Nearly 21% of annual medical spending is spent on obesity-related issues. Of that sum, \$14 billion in medical costs are spent on childhood obesity alone (Kim & Basu, 2016; Kopelman, 2000).

Large amounts of resources have also been allocated to educating the public about the prevention of obesity, and preventive measures have been established to help combat childhood obesity nationwide. Specifically, the United States Department of Agriculture (USDA) has implemented nutritional standards to guide Americans in nutritious food selections. The dietary guidelines for Americans are revised and published every five

years, a regular practice since 1980 (U.S. Department of Health and Human Services and U.S. Department of Agriculture, 2015-2020; United States Office of Disease Prevention and Health Promotion (ODPHP), 2015). Food programs, such as the National School Lunch Program (NSLP) and School Breakfast Program (SBP), have been built into our education systems. These meal programs provide nutritionally balanced meals at low-cost or free for children in school each day (California Department of Education; USDA: Food and Nutrition Services, 2018). These food programs align with the nutritional guidelines set forth by the United States Department of Agriculture (USDA) in a global effort to help children and families combat childhood obesity when away from their primary caregiver (USDA: Food and Nutrition Services, 2018). One can find these meal programs in public schools, non-profit private schools, and residential childcare centers that qualify for assistance (USDA: Food and Nutrition Services, 2018).

These programs have predominantly been established within K-12 educational settings and only minimally in the early childhood education system. Furthermore, some research suggests laws governing school nutrition programs are not rigorous when it comes to nutrition education (Hood, Colabianchi, McElrath, O'Malley, & Johnston, 2012; Taber, Chriqui, Powell & Chaloupka, 2013). A report funded by the Robert Wood Johnson Foundation found that only some states have policy regulations for schools and licensed childcare facilities, which aid in the prevention of childhood obesity. In contrast, other states have limited to no regulations regarding nutrition education and nutritional standards for schools and licensed childcare facilities (Levi, Segal, St. Laurent, & Rayburn, 2014). In California, the state has a regulation for licensed childcare facilities

to have healthy eating policies, but no regulations on following nutritional guidelines set forth by the Federal Government (Levi, Segal, St. Laurent, & Rayburn, 2014).

### **Statement of the Problem**

Programs have been established in the hopes of preventing childhood obesity (Levi, Segal, St. Laurent, & Rayburn, 2014). While there are financial resources allocated to address standards outlined in our K-12 educational system, fewer policies and regulations have been directed to young children. Childhood is a crucial stage in the development and formation of lifelong habits. Recognizing the source of problem behaviors linked to childhood obesity and establishing a foundation for prevention in our schools is critical in preventing childhood obesity. Decreasing childhood obesity therefore starts with our early childhood educators.

Early educators are at the forefront of helping to define and establish best practices for young children. They help lay the foundation for building healthy choices, spreading awareness through knowledge and training, role-modeling, and promotion of healthy options and exercise (Sisson et al., 2017). Research has shown that early intervention is the best way to combat and establish healthy eating patterns and behaviors in young children, which may persist throughout their lifetime if not taken care of early (CDC, 2015; Sisson et al., 2017). Understanding teachers' knowledge concerning nutrition education and where they get their nutritional information is a necessary first step in establishing a basis for further prevention of obesity among young children. Identifying areas where teachers lack understanding is necessary in order to improve proficiency.

Current research has been conducted to understand teachers' perceptions in publicly-funded childcare centers, but there is a lack of research in privately-owned centers. It is essential to consider privately-owned as well, because about 70% percent of children in the United States are in care.

### **Purpose of the Study**

The objective of the study was to investigate early childhood educators' knowledge and perspectives on the role of nutrition education in early childhood. This particular study focused on educators working in one private school setting. The study investigated nutrition education within the program, teachers' knowledge of nutrition education, and teachers' nutritional practices in the classroom. In addition, the researcher attempted to identify whether teacher perceptions were associated with their approach to integrating or not integrating nutrition into the curriculum and how their perceptions might have influenced children's nutritional health. The present study addressed the following research questions:

- (a) What do teachers know about nutritional guidelines in early childhood education?
- (b) What are teacher's beliefs about their roles and responsibilities in children's nutrition education?
- (c) What are teacher's practices to address nutrition education in the classroom?

### **Organization of the Thesis**

This chapter provided a brief overview of the significance and purpose of the current qualitative study. Following, Chapter 2 first discusses the theoretical framework

that guided the present study. Chapter 2 also extensively reviews literature regarding the state of childhood obesity in the U.S. and nutritional policies in K-12 and ECE educational settings. Chapter 3 describes the methodology of the study including the participants, materials, and procedures to obtain data to evaluate the research questions. Results from the focus group interviews are presented in Chapter 4. Finally, Chapter 5 discusses the findings and compares the perspectives of teachers working in private centers to existing research on teachers working in publicly-funded ECE centers. Furthermore, Chapter 5 discusses limitations and implications of the study.

## Chapter 2

### LITERATURE REVIEW

The purpose of the current study was to investigate nutrition education within one private ECE program. Specifically, the study aimed to understand the teachers' knowledge of nutrition education, their beliefs about their role in nutrition education, their nutritional practices in their classrooms. In this chapter, the researcher first provides an overview of the theoretical framework that grounds the current study. Next, is a review of the current state of childhood obesity within the U.S. and the development of nutritional guidelines to combat childhood obesity. Following is a review of the literature relevant to teachers' perceptions of nutrition education within K-12 and early childhood education settings. The chapter concludes with an overview of the present study and the research questions.

#### **Theoretical Framework**

Urie Bronfenbrenner's theory of human development provides a framework for understanding the contexts in which children learn. He believed children learned through their environment and learned through interactions within their system, which is an ever-evolving state of development (Tudge, Morkova, Hatfield, & Karnik, 2009). Bronfenbrenner emphasized the broader environment and argued it is essential to think of children's development and learning through the concept of layers that encompass them as they develop and grow (Bronfenbrenner, 1994). As children grow, the nature and quality of their interactions change over time.

The bioecological systems approach describes how an individual's biological characteristics, combined with the environment, help to shape one's development. In his early work, Bronfenbrenner commonly drew upon the image of nesting dolls to explain how an individual, at the core of development, is influenced by different environmental systems ranging from interactions with the immediate family to those within the broader culture. These systems (i.e., the microsystem, mesosystem, exosystem, and macrosystem) are layers which have a bi-directional relationship (Bronfenbrenner & Morris, 2006). While individuals may receive more exposure to one system over another, each system maintains a symbiotic relationship within the broader structure, which strategically impacts development in meaningful ways (Bronfenbrenner, 1994). For example, with children spending more time in an educational system (microsystem), the more exposure they have within that system. Within an individual's microsystem is their most immediate contacts, their family, neighbors, local community. The interactions which take place within these microsystems have a bi-directional influence, that is, individuals are influenced by the behaviors, actions, and beliefs of others, and also influence the behaviors and actions of those with whom they interact.

The next layer beyond the microsystem is the mesosystem. Within this system lies the connections between an individual's microsystems. For example, if a child attends a religious school, they start to make the connections between their school and home environments. If a child and their family do not practice religion, but the child goes to a religious school, and every day before a meal, they say a blessing. Soon that child will make the connection that at school they say a blessing before each meal, but not at home.

The layer beyond the mesosystem is the exosystem. The exosystem is the broader system in which an individual interacts with indirectly and can have an indirect impact on the individual. Within this system, an individual's economic status, where their parents work, and their social experience has a more considerable impact upon an individual's inner layers. Another example in this system is the childcare facility in which a child attends. The broader culture of the center, how the center runs, and who they interact with can have an indirect impact on the individual. For example, the cost of the childcare facility, and the quality of the program and teachers can have an indirect impact on the individual.

Outside the exosystem lies the macrosystem. Within this system lies the broader context, which profoundly differs from all the other contexts. This layer comprises of our political, economic, social, and legal systems. For example, within the context of this thesis, the federal and statewide nutritional guidelines and policies set forth has an indirect impact on individuals within the U.S. Guidelines set forth has impacted our schools, and the way teachers talk about nutrition.

### ***Process-Person-Context-Time***

In comparison to his earlier work, which described only the context, Bronfenbrenner's later work described developmental processes. Bronfenbrenner described process as the connection between certain aspects of the context (social class or culture) or aspects of the individual (gender) as an outcome of interest (Tudge et al., 2009). This process has been identified as proximal processes and as being a key component in his developmental theory. Development occurs through a progressive

process in which an individual actively evolves through regular contact with persons, objects, and symbols in their environment (Tudge et al., 2009). Bronfenbrenner described the interrelationships between process, person, context, and time (PPCT), which aids in shaping the development of an individual.

**Process.** The process in which a child interacts with the elements in their external environment supports growth and development (Bronfenbrenner & Morris, 2006). An example of a natural process that children experience in their lifetime would be the interactions with other children on a playground at school. These crucial interactions, such as learning to play positively with peers on a playground guide the child to understand how the world works as well and how they fit into it (Bronfenbrenner & Morris, 2006). Regarding nutrition education, the proximal process would be children learning information about nutrition, how to make sense of it, going on to make healthy choices, and how healthy habits fit into their lives.

**Person.** Not only does the process in which an individual interacts with the environment around them impact their development, their unique biological and genetic aspects also play a large part in predetermining their development. Bronfenbrenner divided the characteristics associated with a person into three types: demand, resource, and force (Bronfenbrenner & Morris, 2006; Tudge et al., 2009).

Bronfenbrenner described demand characteristics as a unique stimulus to the individual, such as age, gender, skin color, and physical appearance, which can have an immediate impact on an individual's interactions with others (Tudge et al., 2009).

Resource characteristics are not immediately apparent. Bronfenbrenner described the

characteristics as past experiences, intelligence, skills, and social and material resources (Tudge et al., 2009). For example, an individual may not have access to nutritious foods, or their parents or teachers are not knowledgeable about nutritious foods. Lastly, Bronfenbrenner described force characteristics as specific temperament, motivation, and persistence (Tudge et al., 2009). In this case, depending on an individual's characteristics and temperament, they may be more willing to try new foods. In contrast, another child may be more reluctant and stubborn to try new foods.

**Context.** The context or environment in which an individual spends time involves the four major systems, as mentioned previously. The first environment is any environment in which an individual spends a great deal of their time such as home, school or with peers (microsystem) (Tudge et al., 2009; Tudge et al., 2016). These interactions the individual is making has a bi-directional influence on the structure of the individual's system. Parents can have an influence on a child's behaviors, and the child in return can have an influence on the parents' behaviors (Tudge et al., 2016). For example, if a parent packs a child's lunch with food, they believed their child liked it because they had eaten the food before. The lunch comes back uneaten because the child says they do not like the food. The parent can either provide different food or send the same food again in the hopes that the child will eat it.

The connection between a child's teacher and parent (mesosystem) is the layer which links an individual's microsystems together (Tudge et al., 2016). Depending on parent and teacher relationships, this can have an indirect influence on the child's microsystems. A parent who works long hours can have an indirect impact on the child,

which in turn has them spending more hours in the care of a teacher or caregiver. The connection between each of these layers is the exosystem (Tudge et al., 2009; Tudge et al., 2016). Lastly, the macrosystem encompasses all the other layers of the culture or extended social structures that share values or a belief system that can have an impact on the developing child (Tudge et al., 2009; Tudge et al., 2016). Although a child may not have any control over where they live, their socioeconomic status can directly and indirectly impact their lives. For example, where a child attends school in a specific neighborhood can impact the child's system.

**Time.** Time is seen as the constant factor that impacts the overall quality of relationships and connects the major systems that influence behavior and relationships, (Tudge et al., 2009; Tudge et al., 2016). As individuals develop, their interactions between their systems change and develop. According to Tudge et al. (2009), Bronfenbrenner discussed time in three instances. Micro-time (specific interactions associated with an activity), meso-time (the consistency in which events occur in an individual's environment), and macro-time (historical and social occurrences which impact daily events) (Tudge et al., 2009). Regarding nutrition, the amount of time and quality of time spent and the consistency of helping develop children's nutritional habits can influence the outcomes of some nutritional habits. For instance, the historical outcomes of bringing awareness to childhood obesity had significantly impacted American children, especially bringing awareness and practice of nutrition education within our school systems.

### *Applying Bronfenbrenner's Theory*

Bronfenbrenner's Bioecological theory distinguishes between natural behaviors and the relationships between individuals' interactions in their environment and how these interactions are formed. He refers to these connections through the four interrelated systems: microsystem, mesosystem, exosystem, and macrosystem. These systems can have a positive or negative impact and support individual growth as well as group connections. The four systems follow a unique pattern for each individual in which they are connected (Tudge et al., 2009; Tudge et al., 2016). As with any human being, eating and nourishing our bodies is a natural behavior. Over time what we learn, how we learn, and specific behaviors we develop to nourish our bodies can influence developing healthy habits and the outcome of healthy behaviors. These interactions between each system are what Bronfenbrenner's theory provides as the framework for understanding the context in which children learn healthy behaviors and habits. These theoretical ideas provide a foundation for how teachers and caregivers can shape children's nutritional outcomes.

Within an individual child's microsystem, dietary habits are formed in early childhood. Children's primary relationship with their parents and caregivers sets the foundation for eating habits and nutritional knowledge (Tovar et al., 2016; Swindel, Sigmand-Grant, Brannen, Fletcher & Johnson, 2017). In today's society, after a child is born, in many cases both parents are entering back into the workforce. Children are now entering care facilities at a younger age than in previous decades.

In a microsystem, the bi-directional interactions between individuals and their environment is the strongest and has the most impact on the individual (Tudge et al.,

2009). As children are spending a significant portion of their day in a childcare facility, childcare environments, practices, and policies around nutrition can have an impact on children's dietary intakes and behaviors (Erinosho et al., 2018). Early childhood is a fundamental point in a child's life for developing and influencing outcomes of children's eating behaviors (Erinosho et al., 2018; Olson & Moats, 2018). With an average of nearly 36 hours a week in the care of an educator and away from their primary caregiver, teachers stand to have a powerful impact on children's nutritional knowledge and dietary habits (Childcare Aware of America, 2017; Erinosho et al., 2018; Lisson, Goodell, Dev, Wilkerson, Hedge & Stage, 2011; Swindle et al., 2017).

Recent research suggests that children consume one-third of their caloric intake outside of the home (Sisson et al., 2017; Swindle et al., 2017). Children are, therefore, increasingly being socialized and receiving information about nutrition and food choices in the presence of a teacher. Whether it is in elementary through high school or in early childcare, the context of nutrition is integrated into our education system (Erinosho et al., 2018; Sisson et al., 2017; Tovar et al., 2016). Schools have the ability to influence outcomes of health and education, which subsequently can determine the future wellbeing and productivity of populations (Olson & Moats, 2013). Thus, school environments and teachers can indirectly influence an individual's microsystem and their overall systems.

The bioecological theory of human development accounts for how an individual's nutritional outcomes are formed within contextual relationships with teachers, and how over time, nutrition education has implications within all developmental systems. The

following sections describe factors influencing children's nutrition outcomes from the macrosystem inward to the microsystem (indirect to direct). Furthermore, the following sections reflect historical events that have shaped the way we view nutrition education in the United States and how teachers have become the forefront of delivering nutrition education.

### **Childhood Obesity**

In the United States, the percentage of children and adolescents affected by obesity has more than tripled since the 1970s. Obesity has become a global epidemic. According to the CDC, data from a 2015-16 study showed nearly 1 in 5 school-age children were obese (Center for Disease Control and Prevention, 2018). Approximately 18% of children between the ages of 2-19 years fit the criteria for being obese or overweight, and 13.9% of these children are between the ages of 2 to 5 years of age (Center for Disease Control and Prevention, 2018; Huang, Lanza & Anglin, 2014; Ogden et al., 2014).

In 2014, the Center for Disease Control and Prevention reported the federal government spends about \$20 billion to reimburse schools, childcare centers, and afterschool programs for children's meals (Center for Disease Control and Prevention, 2018). The report focused on prevention programs, which account for more than 80 percent of all spending on child nutrition programs in the United States (Center for Disease Control and Prevention, 2018). These prevention programs established in schools are available and accessible to children of low-income families and childcare centers who

serve these children to help combat obesity in young children (Center for Disease Control and Prevention, 2018).

In 2010, the Healthy, Hunger-Free Kids Act was passed by Congress to improve these program standards; these programs include the National School Lunch Program (NSLP) and School Breakfast programs (SBP), which serve children in our education system. The Congressional Budget Office (2015) reported that since the early 1990s to 2014, population growth, higher reimbursement rates, policy changes, and other contributing factors have increased spending. The increased funding has more than doubled the amount for nutritional programs across the U.S. and is expected to rise going forward due to inflation (Congressional Budget Office, 2015). Obesity has remained a concern, and preventative measures appear to be in place in order to mitigate the issue. In recent years, action to educate the public and our children about dietary intake patterns has taken off to reduce the outcome of health-related issues later in life.

### **Nutrition Guidelines in the United States**

As obesity has remained a health concern, preventative measures have been implemented to try to address the problem. Beginning in the 1940s, the United States Department of Agriculture (USDA) specified recommendations for nutritional guidelines for all Americans to follow. By 1980, the USDA created the "Hassle-Free Daily Food Guide" to help U.S. consumers guide their daily intake of fruits and vegetables (United States Department of Agriculture: Food and Nutrition Service, 2018). To continually guide Americans in developing healthy nutritional habits, the USDA created the "Food

Pyramid." This effort was to bring awareness to food patterns, which focused on portion size, a variety of nutritional food intake, and reducing particular food groups.

In 2005, the USDA updated the Food Pyramid to "My Pyramid" and joined forces with the Department of Health and Human Services (DHHS) to publish and introduce the Dietary Guidelines for Americans (DGA), a tool to keep Americans healthy. The Departments decided to release and update a new version of the DGA in order to keep Americans informed of recent research in the field of nutrition and dietary recommendations (Haack & Byker, 2014; United States Department of Agriculture (USDA), 2011; United States Department of Agriculture: Food and Nutrition Service, 2018). Following federal regulations, USDA and DHHS updated the latest version of the DGA in 2015 and will continue updating it every five years (Department of Health and Human Services (DHHS), 2016). The DGA guidelines indicate detailed information in order to inform consumers and set standards to help promote nutritionally healthier lives for Americans and their families (DHHS, 2016). By 2011, MyPyramid was replaced by MyPlate, in the effort to help consumers visualize portion size associated with each food group based on the DGA guidelines. MyPlate heavily focuses on nutrition education and total health (USDA, 2011; United States Department of Agriculture: Food and Nutrition Service, 2018).

In a systematic review, Haack and Byker (2014) reviewed the U.S. population's adherence to, and knowledge of, the DGA nutritional guidelines recommended by the DHHS and USDA, which included understanding of the Food Pyramid, MyPyramid, and MyPlate. The review examined a total of 31 published studies that specifically examined

knowledge and adherence to DGA guidelines and recommendations. They found that across studies knowledge of nutrition guidelines improved over time since the publication of the DGA, but decreased with the age of the participants. The researchers concluded from each of the studies that this could be associated with the influence of school systems in promoting nutrition guidelines but noted this was not the only factor. They also found that adherence to nutrition guidelines was low across demographics and participants were consuming insufficient levels of fruits and vegetables, and especially dairy. Haack and Byker (2014) concluded that knowledge does not equal behavior, and policy and regulation recommendations would benefit from identifying standards for quality nutrition. They also recommended for future strategies in order to maximize knowledge and adherence to guidelines and assist in DGA recommendations. Guidelines should promote demographic diversity which promotes behavioral and environmental strategies that align with the DGA and specific populations of Americans.

In a continuing effort to combat obesity, requirements for implementation of providing children with healthy foods in schools were strengthened. New legislation included significant improvements that aimed to provide children with healthier and more nutritious food options, educate children about making healthy choices, and teach children healthy habits that can last a lifetime (USDA, 2011; United States Department of Agriculture: Food and Nutrition Services, 2018). The USDA: Food and Nutrition Services finalized regulations establishing a framework for school wellness programs. The recommendations are to put in place policies, standards, and guidelines for promoting healthy eating, marketing, along with an evaluation strategy in efforts to

enhance school nutrition environments and services for children within our school system (USDA, 2011; USDA: Food and Nutrition Services, 2018).

Although federal efforts are in place, each State provides local legislation in their efforts to combat childhood obesity. In California, supplemental nutrition regulations and policies have been established as the bare minimum for schools to follow in order to meet the health guidelines set forth by the Federal government (California Department of Education (CDE), 2015). School districts are required to develop guidelines for schools to implement and develop their wellness policies that meet criteria for district regulations, and criteria may be stricter if schools are State or Federally funded (United States Department of agriculture: Food and Nutrition Services, 2018; CDE, 2011).

Health and wellness policies and practices have been established throughout our school system in the United States to support families and children with their nutritional health needs. Programs such as NSLP and SBP were established in schools to help low-income families to combat hunger and provide children with nutritionally balanced meals. These programs have become an integral part of the United States school system's nutritional efforts to combat obesity (Haack & Byker, 2014; USDA, 2016; DHHS, 2016; Taber et al., 2013). Such food programs have become another extension for nutrition education within our school system.

Many have opined that the implementation of these guidelines and programs are not enough. Story (2009) suggested after an initial assessment in 1995, children had been consuming higher-than-recommended intakes of total fats, saturated fats, and sodium in their diets at school. Data also indicated that children were consuming more substantial

portions of total energy from high-calorie and low-nutrient foods and beverages. The findings in this study are consistent with Haack and Byker's (2014) findings that Americans of all ages generally under consume fruits and vegetables and over-consume protein. Hood et al. (2013) examined school district wellness policies, which are federally required components associated with food and beverage availability outside school meal programs. The purpose of their study was to examine the extent to which federally required components of school wellness policies were associated with the availability of foods and beverages in competitive venues. Results indicated federally required components of wellness policies rendered lower-availability of less-healthy foods and beverages and higher- availability of more nutritious foods. They concluded that schools should have wellness policies.

School officials nationwide have become more aware of the issue regarding childhood obesity and are deciding to become certified as compliant with nutrition standards within their schools in their districts. Although many school districts are moving towards creating awareness around childhood obesity, a more recent study by Merlo, Brener, Kann, McManus, Harris, and Mugavero (2015) suggested schools are still struggling to provide children with fresh, readily available fruits and vegetables. The study suggested that this is due to the lack of proper storage and proper equipment to serve children safely within schools. School policies surrounding nutritious food selection and an understanding of children's food preferences are advantageous in efforts to improve and develop healthy habits in children. A more direct approach is needed to help a child understand what it means to have healthy habits that can last a lifetime. The

current study examined teachers' knowledge of policies and guidelines for nutrition education in ECE settings. Furthermore, the current study examined classroom teachers' practices to address nutrition education in their classrooms. It is important to understand gaps in teachers' knowledge and practices to be able to subsequently address the quality of nutrition education in ECE settings.

### **Nutrition Education in K-12 System**

The National School Lunch Programs (NSLP) and School Breakfast Program (SBP) are responsible for providing nutritious meals for children in need of food services (USDA, 2011). The USDA and HHS are responsible for the regulation and content of the meals provided to schools in the U.S. and are required to ensure meals follow DGA guidelines (ODPHP, 2015). Although nutritional programs such as these exist, no regulatory measures establish and ensure children are consuming the necessary nutrients and developing healthy habits. Therefore, schools have become the optimal backdrop for the distribution of interventions to promote life-long healthy habits for children (Colmen, Shordon, Caparosa, Pomichowski, & Dzewaltowski, 2012).

In order for schools to further promote nutrition education, intervention measures have crept into classrooms. Research has shown that early intervention is useful in establishing healthy habits and reducing childhood obesity (Center for Disease Control and Prevention, 2018). Schools have become more reliant on classroom teachers to promote and provide children with adequate nutrition education as part of their curriculum (Colmen et al., 2012). The California Department of Education (CDE) developed the nutrition education resource guide for California public schools

(kindergarten through grade twelve). These guidelines meet the health education content standards in nutrition education to align with common core state standards (California Department of Education (CDE), 2017). Teachers and schools use these guidelines as a tool to help children adhere to the recommendations and standards of nutrition in order to develop and live a healthy lifestyle (CDE, 2017).

According to Perra, Frei, Frei, Wong, and Bobe (2015), it is important to consider current approaches to teaching nutrition and teacher perceptions to nutrition education in the classroom across the United States because standards set forth do not determine methods of instruction. In their 2015 study, Perra et al. examined challenges and opportunities elementary teachers in the U.S. encountered in the classroom. Results indicated that many teachers valued nutrition education but felt as though there was not enough time for nutrition content on top of their core subject matter. Teachers felt that nutrition education was important, but their greatest barrier was incorporating nutrition education into their core curriculum. Some teachers stated that lack of time was a consistent barrier while other teachers stated suitable curriculum was a barrier. Additionally, most teachers were interested in opportunities for improvement and educational trainings. Teachers suggested an integration of nutrition curricula into other core subjects such as math, science, and English would greatly benefit the children. Others teachers also point out that unless food environments at school and home reflect teaching in the classroom, then this will have a limited impact on children's dietary habits, which they felt was a barrier to nutrition education overall (Perra et al., 2015).

Similarly, Hall, Chai, and Albrecht (2016) explored how elementary teachers described their experiences and perspectives in nutrition education and found that teachers experienced mixed feelings about their roles in nutrition education in the classroom. Some teachers felt that their roles were to be educators, role models, and coaches. Others felt their role was supporter, advocate, and enlightener. All teachers felt that nutrition education and their role as educator was important; and almost all teachers also felt they played an important role in influencing their students. However, teachers felt that barriers included amount of time allotted for the subject, with the materials provided for teaching, and children's home environment. Teachers also reported that there was simply not enough time to dedicate to nutrition education by itself and that they would try to incorporate the topic into other subject areas, but sometimes were not able to spend a lot of time on it. Teachers commented to using only the materials provided and that resources and budget created additional barriers to the nutrition education experience. Teachers also commented that if home life did not mirror what was being taught then this could undo efforts made in the classroom. Teachers also expressed a need for strategies to communicate with parents about the subject and felt as though they were currently doing their best by creating newsletters home to parents.

Overall, teachers expressed a positive experience and the importance of nutrition education, but felt there were certain barriers which posed challenges. Furthermore, the findings in Hall et al.'s (2016) study relate to Perra et al.'s (2015) study in that teachers value the importance of nutrition education and face common barriers. In an effort to work with classroom teachers to design, implement, and evaluate nutritional curriculum,

encouragement of health educators and public policy officials is needed in order to meet the needs and better facilitate higher quality nutrition education for children in our education system (Hall, Chai & Albrecht, 2016). Both of these studies suggested that K-12 teachers face multiple barriers to implementing nutrition education into the classroom. Teachers of varying age groups appeared to report similar barriers and request additional support to address the nutritional needs of their children.

Many schools are relying on K-12 teachers to integrate nutrition education into their core subjects. A recent study conducted by the CDC suggested that not only are teachers facing barriers with the integration of nutrition education into their classroom, but there are also discrepancies in our K-12 educational system across schools and their wellness policies. In 2016, the Center for Disease Control conducted a national study, the School Healthy Policies and Practices Study (SHPPS), and found that only 70 percent of states required the topic of nutrition and dietary behaviors in elementary school classrooms (Center for Disease Control and Prevention, 2018). In the U.S schools have become the backdrop to providing nutrition education to our young children, and challenges remain in providing quality nutrition education to K-12 students to encourage sustained dietary behavior changes (Cunningham-Sabo, Balgopal, Seeding & McGuin, 2017). Therefore, it is important to look at how ECE programs are providing nutrition education to our younger students.

As many K-12 schools have become reliant on classroom teachers for delivery of nutrition education, this has left many with questions concerning the quality and intensity of the overarching messages taught in nutrition education (National Nutrition Education

Curriculum Standards workshop, 2013; Hall, Chai, & Albrecht, 2016). K-12 teachers who are required to deliver nutrition education as part of their curriculum have describe their experiences as inadequate or have insufficient time and resources to spend on the topic. Elementary teachers are tasked with balancing nutrition education with other common core subject matter (Hall, Chai, & Albrecht, 2016; Perra et al., 2015). The primary goal of standards has been to improve academic achievement and health literacy for all students (CDE, 2017). However, instruction and implementation have been left up to the discretion of the classroom teacher to provide nutrition knowledge to the children (Hall, Chai, & Albrecht, 2016; Perra et al., 2015). As children younger than five years old are spending increasingly more time in a school setting, it has become essential in figuring out how early childhood educators can also impact children's nutritional habits and whether or not they face similar barriers to elementary teachers.

Developing healthy habits are central to living a healthy lifestyle. Children's environment (such as school) can influence them, and teachers have become the forefront for nutrition education delivery. Elementary teachers have provided children with a nutritional foundation, but face barriers in providing children with adequate nutrition education. The exposure of nutrition education in early development can potentially provide children with an earlier foundation needed to create healthy habits that can last a lifetime. The current study extended the research by examining ECE teachers' perceptions about current nutrition standards for young children, as well as their beliefs about their role in nutrition education.

### **Nutrition Education in Early Childhood Education**

In recent years, research has come to recognize the role Early Childhood Education (ECE) programs, teachers, and environments have in aiding children's dietary habits (Erinosho et al., 2018). Research suggests that the early years are formative for developing a strong foundation for healthy habits. As we know, children are increasingly spending more time in a school-like environment at earlier ages than before. Research has demonstrated that school environments have the ability to influence outcomes of health and education, which subsequently can determine the future wellbeing and productivity of populations (Olson & Moats, 2017). With the increase of young children spending more time in childcare environments, it is essential to understand the context of early childcare and preschool facilities in reducing the rate of childhood obesity. With the full range of early childcare facilities educating our youngest children, there is limited research that sheds light on early educators and their role in helping to shape our young children's dietary behaviors. Limited research also includes the delivery of nutrition education across types of childcare facilities, particularly in private care settings.

First, it is important to understand the differences between K-12 education and Early Childhood Education (ECE) in the United States. Kindergarten through grade 12 is compulsory (i.e., attendance is mandated by law); therefore, standards and curricular regulations apply (California Department of Education (CDE), 2020). ECE is a relatively new field in education and thus not mandated. Many types of ECE programs exist; for example, there are childcare centers, family home childcare centers, preschool programs, and school-age programs (Childcare Aware, 2020). For many American families,

childcare is a necessity, and finding affordable, high-quality childcare has remained a significant challenge for many American families across the United States. Access to childcare differs based on geography, race/ethnicity, and income (United States Department of Education (USDE), 2015).

Childcare facilities in the US are regulated by States and licensed by their State's agency (Childcare Aware, 2020). The Department of Social Services regulates childcare facilities in California and ensures all facilities operate according to the Health and Safety codes and Title 22 regulations (California Department of Social Services (CDSS), 2018). Some childcare programs choose to extend their program quality by becoming accredited by a national accrediting body; attaining this is an entirely voluntary process for the childcare program (Childcare Aware, 2020). The two accrediting bodies for ECE are the National Association for Education of Young Children (NAEYC) and the National Association of Family Child Care (NAFCC). Applicants that choose to become accredited must show they meet specific requirements above state licensing requirements (Childcare Aware, 2020).

Among ECE programs there is a great deal of variability in Program type (e.g., public center-based, private center-based, and family/home-based care). There are also disparities across childcare in the U.S. with regards to nutrition education. These issues are true in the Sacramento region where there are a total of 1690 licensed center-based childcare programs and family-run home daycare centers (CDSS, 2019). Differences may occur from center to center in terms of quality of care, even in the quality of nutrition and nutrition education. In order to maintain relative consistency among childcare centers,

regulatory measures have been established by states to ensure the health and safety of all children and the promotion of healthy eating (USDHHS, 2016).

In 2008, the California Department of Education released its second version of the California Preschool Learning Foundations, which also encompasses critical skills and knowledge children attain when given the benefit of high-quality preschool programs (CDE, 2020). The latest version focused on the domains of social-emotional development, language, and literacy and included visual and performing arts, physical development, and health (CDE, 2020). In 2009, the Department of Education created the counterpart to the preschool foundations, the infant/toddler learning foundations, to help build an understanding of the importance of the early years in children's learning and development (CDE, 2020). Thus, there are now specific learning foundations focused on health in infant-toddler care and preschool education.

Additionally, to ensure the quality of care for meeting children's nutritional needs, some childcare settings receive federal support. There are several federal programs which assist with providing meals in ECE settings to children of low-income families; similar to the NSLP and SBP in the K-12 education setting. The Child and Adult Care Food Program (CACFP) is a government-assisted program which has been designed to assist qualifying childcare programs to serve healthy and nutritious meals and snacks to children in their care (United States Department Agriculture: Food and Nutrition Services, 2018). CACFP reimburses childcare centers for a portion of the costs of meals and snacks, depending on the income status of families. Programs who participate are required to follow recommendations and guidelines for feeding young children, which

also comply with licensing standards and align with DGA guidelines (CDE, 2020; CDSS, 2019; United States Department of Agriculture: Food and Nutrition Services, 2018). The governmental assistance is not accepted across childcare settings. Therefore, if the childcare setting does not meet certain criteria, then they do not qualify for nutritional assistance (e.g., private childcare).

One such program that receives public funding to ensure quality of care with regards to children's nutritional needs is Head Start. Head Start provides federally regulated center-based childcare programs designed to serve children of low-income families and enrich school readiness with a wide range of curriculum. Their guidelines outline fundamental knowledge and skills most children can achieve when provided with opportunities to promote early learning and development, which also encompasses nutrition and physical activity (USDHHS, 2016; CDSS, 2019).

Studies have been conducted to examine Head Start teachers' perception about nutrition education in the Programs and identified barriers and challenges to promoting nutrition within their Programs. Derscheid, Umoren, Kim, Henry, and Zittel (2010) identified Head Start teachers' perceptions of promoting healthy habits and factors which may influence those perceptions, including level of education, years of experience, and program involvement. The study revealed that Head Start teachers believed their role was to model nutritional concepts during mealtimes, circle time, and free play, which aligns with Head Start program guidelines. In addition, to modeling nutritional concepts, teachers felt their role was also to educate parents on children's nutritional needs and discuss foods and activity choices that could be made at home.

Though nutritional practices are part of the primary mission of Head Start programs, teachers discussed challenges for modeling eating behaviors in their classroom. Teachers stated that during snack and mealtimes family-style eating poses some challenges for their children. For example, some children may not like the way some foods are presented and are unwilling to try new foods at times. Teachers felt that if the children were part of the menu planning, they might be more willing and accepting of trying new foods. Teachers agreed that family-style eating was great for making healthy choices and mealtimes are a way to teach children skills, such as pouring, serving, and passing. Moreover, teachers of Head Start programs revealed that strategies for delivery of nutrition education sometimes involved consulting a dietitian to teach nutritional concepts in order to gain more ideas for their teaching. Teachers facilitated nutrition education by using the dramatic play area and free play time to talk to the children about food, as a means to discuss the importance of good health. For example, teachers stated they would talk about how “we don’t play with food” or use food as art activities. During mealtimes teacher used the time to identify foods and have conversations about foods, stating they often referenced the food guide pyramid (Derscheid et al., 2010). The present study explored teachers’ practices of meal and snack times and investigated their perceived barriers in implementing nutrition education in the classroom.

The conclusion of the study revealed no significant difference in education levels and years of experience in teachers; however, suggested that teachers with higher education had less years of experience than those with less education and may rely more on guidelines than the more experienced teachers. Overall, teachers reported to have

strategies in promoting nutrition and healthy habits regardless of education and years of experience. A proposed need for more in-depth discussions and professional development opportunities for incorporating developmentally appropriate curriculum for the delivery of nutrition education, as well as, modeling and supporting behaviors was suggested by teachers (Derscheid et al., 2010). Several factors contributed to Head Start teachers' perceptions of their role in nutrition education. Teachers felt they have a role in in children's nutritional health and often believe they are responsible for delivering nutrition education and value nutrition education in ECE settings; however, they describe barriers that need to be overcome to provide high quality nutrition education in ECE settings.

In addition to perceived barriers in Head Start programs, further research indicates that often times there is the assertion that what one says and what they do can follow different trajectories. Fallon, Halloran, Gorman, Ward, Greene, and Tovar (2017) compared self-reports and observed feeding practices in Rhode Island Head Start program teachers across the state. Teachers first completed a questionnaire to self-report feeding practices, then an observation during a scheduled mealtime was conducted. In comparison, between the self-report and observed measures, results indicated there were high levels of agreement between teachers and observations with not using food as punishments, to control emotions, or promising children something for eating specific foods. In contrast, differences occurred in self-report and observed measures in praising children for trying new foods, allowing children to take multiple servings, and modeling enthusiastically to get children to try new foods (Fallon et al., 2017). Researchers concluded that the high levels of agreement could have been due to the rigorous policies

in place from Head Start programs. Differences seen in the lower levels of understanding could have occurred due to teachers not knowing what to do during mealtimes and suggested for future policies to highlight opportunities for engaging in more healthful feeding practices (Fallon et al., 2017).

Head Start programs are designed to incorporate nutrition education into their daily curriculum and focus on nutritional health. As noted, Fallon et al. (2017) points out the differences in what teachers are actually doing to what they report to be doing. Similarly, as Derscheid et al. (2010) pointed out, teachers of Head Start programs expressed a need for guidance in modeling nutritional behavior and for the delivery of nutrition curriculum. In order to achieve high quality nutritional standards perceived barrier need addressing for promotion of high-quality nutrition education in Head Start programs. Relatedly, Lisson et al. (2016) found that teachers and administrators of other Head Start programs faced similar perceived barriers. Administrators and teachers reported insufficient funding available, limiting their ability to purchase or replace nutrition education materials, which subsequently reduced the quantity and types of materials used. Similar to Derscheid et al. (2010), teachers perceived barriers were insufficient time for teachers to teach nutrition education. Some teacher felt that there was inadequate scheduling for nutritional curriculum and suggested due to Head Start programs promoting kindergarten readiness, teachers felt they did not have enough time in comparison to other subjects. Lastly, although teachers attended trainings, a desire for more organization of current nutritional resources and opportunities for professional development specific to nutrition educations was needed (Lisson et al., 2016).

Recommendations and policy guidelines are one aspect of providing our young children with establishing healthy habits. However, as the literature suggests, teachers of federally-guided center-based programs in the U.S. have similar values regarding nutrition education and are facing similar barriers when it comes to providing children with adequate high-quality nutrition education. What remain unknown are the perceptions and experiences of teachers in privately-funded center-based programs regarding nutrition education. If Head Start programs are designed to incorporate nutrition education into their daily curriculum and to provide children with quality nutrition, then why are their teachers still struggling with providing children with quality nutrition education? How does this compare to the experiences of teachers in other types of programs?

### **The Present Study**

Childhood obesity is a sustained issue in the United States. The federal government established the School Lunch Program (SLP) in order to provide children with healthy meals while in school (CDC, 2016). In recent decades policies have changed to provide children with nutritious meals in schools. Teachers have also become the forefront of nutrition education delivery, but face barriers.

As children spend increasingly more time in school-like environments at earlier ages, it becomes essential to focus on ECE educators and their role in helping lay the foundations for healthy habits. Programs such as Head Start and CACFP, are federally regulated programs that help ensure children with adequate nutritious meals and ensure guidelines for nutrition education delivery. However, nutrition education programs are

not equal across ECE programs in the United States. Research is limited in providing a wide range of early childcare program practices of nutrition education. Head Start programs, and some non- Head Start programs have been at the forefront of research in providing information into the role of teachers and nutrition education. What is still unknown is how ECE teachers differ in their approaches to nutrition education. Disparities exist among ECE programs, it becomes important to consider similarities and differences in federally run programs to quality care private programs to see how schools are helping reduce childhood obesity.

As research suggests, teachers play an essential role in shaping children's nutritional health and development (Hall, Chai, Albrecht, 2016; Sisson, Smith & Cheney, 2017). Teachers help foster establishing healthy behaviors and lay the groundwork in their early experiences (Erinosho et al., 2018; Fallon et al., 2017; Sisson, Smith & Cheney, 2017). As the research shows, much of the research has looked at federally-funded childcare facilities. With vast disparities among ECE centers, it is important to shed light on what early childhood education teachers are also doing in privately-owned centers to deliver nutrition education. Therefore, the present study focused on one Sacramento-region, NAEYC accredited privately-owned and operated ECE center. This study examined: what do teachers know about nutrition education guidelines in early childhood education, what are teachers' beliefs and practices of nutrition education, and what are teachers' beliefs about their role in children's nutritional health. It is essential to understand the perceptions, beliefs, and experiences of ECE teachers in private settings in order to better support children's overall health outcomes when attending a private care

program. Effective early nutrition education for our young children is essential in establishing a baseline for the development of healthy habits that last a lifetime.

## Chapter 3

### METHODS

The purpose of this study was to investigate early childhood educators' knowledge and perspectives on the role of nutrition education in early childhood. This particular study focused on educators working in one private school setting in the Sacramento region. The study investigated nutrition education within the program, teachers' knowledge of nutrition education, and teachers' nutritional practices in the classroom. In addition, the researcher attempted to identify whether teacher perceptions were associated with their approach to integrating or not integrating nutrition into the curriculum and how their perceptions might have influenced children's nutritional health. The present study specifically addressed: What do teachers know about nutritional guidelines in early childhood education? What are teacher's beliefs about their roles and responsibilities in children's nutrition education? What are teacher's practices to address nutrition education in the classroom?

#### **Research Design**

A qualitative design was implemented for the current study. Data were collected using a semi-structured focus group interview protocol. The protocol was used to gather, elicit, and build perspective among teachers which helped the group develop perspective with how they see themselves in regard to nutrition education in the classroom.

## **Recruitment of Participants**

This study first began by securing permission to conduct research at a private Jewish Day school in the Early Childhood Education (ECE) Program from the Head of School and the ECE Director. The ECE Program is part of a privately owned and funded Jewish day school which serves seven classrooms ranging from infants six months of age to pre-Kindergarten children and their families. The Program is accredited through the National Association for the Education of Young Children (NAEYC). A total of 36 teachers and staff were initially recruited for participation in the current study.

Because the researcher was an employee of the ECE program, the program director sent an email and recruitment letter on behalf of the researcher to all teachers and staff (Appendix A). Prerequisites for participation included any teachers and staff who had experience with nutrition curriculum or contact with children during snack and mealtimes throughout their workday. The current study included two focus group interview sessions held on two separate pre-established dates. The focus groups occurred after business hours on the campus of the school site. Prospective participants contacted the researcher directly to schedule which date was most convenient for them.

## **Participant Demographics**

Of the 36 teachers and staff initially recruited for the study, a total of 12 teachers agreed to participate in the focus group sessions. Participants' ages ranged from 24 to 53 years ( $M = 33$  years). Eleven of the participants self-identified as females and one self-identified as gender non-binary. Seven teachers identified as White/Caucasian, two self-identified as Hispanic/Mexican, one self-identified as Filipino, and two self-identified as

mixed races. One teacher held a master's degree in education, nine held bachelor's degrees, one held an associate degree, and one teacher had some college experience. At the time of the focus group sessions, the average years of experience in early education was seven years (range: 1 to 15 years). The age of children taught ranged from infants six-months old to preschoolers six-years-old. Tables 1 and 2 present demographic information for all participants.

### **Data Collection Procedure**

Two pre-determined dates to hold the focus groups were selected by the researcher and the ECE Director. Participants contacted the researcher directly to schedule the date for their participation. Data were collected after business hours in a private conference room located on the premises of the school site. Prior to the start of each focus group, all participants were provided with a written consent form to review (see Appendix B). After participants reviewed the consent form and acknowledged their willingness to participate, they were then given a paper demographic survey to complete regarding their experiences in early education (see Appendix C). Once the demographic survey was completed, participants were given a nametag and asked to choose a pseudonym for the purposes of ensuring their confidentiality throughout the audio-recorded focus group session. Each participant was asked to wear the nametag provided and to be sure to only refer to each other by their chosen pseudonym during recording. The recording began once all participants were wearing their name tags.

**Table 1***Demographic Characteristics of Teachers in Focus Group 1*

<i>Pseudonym</i>	<i>Age</i>	<i>Race</i>	<i>Degree</i>	<i>Years Experience in ECE</i>	<i>Gender</i>	<i>Age Taught</i>
Carina	26	Filipino	Bachelor's	2	Female	Preschool
Erika	24	Mexican	Bachelor's	1	Female	Multi Age
Catalina	32	Caucasian	Bachelor's	9	Female	Infants
Barbara	34	Caucasian	Master's in Ed.	10	Female	Prek-K
Kelly	27	White	Bachelor's	3	Female	Infants
Natalia	34	Mixed Race	Bachelor's	13	Female	Preschool

**Table 2***Demographic Characteristics of Teachers in Focus Group 2*

<i>Pseudonym</i>	<i>Age</i>	<i>Race</i>	<i>Degree</i>	<i>Years Experience in ECE</i>	<i>Gender</i>	<i>Age Taught</i>
Wanda	53	Latina	Some College	4	Female	Multi Age
Kim	51	White	Associate's	14	Female	Infants
Ellie	30	White	Bachelor's	2	Female	Multi Age
July	34	White/Jewish	Bachelor's	15	Non-Binary	Multi Age
June	34	Mixed Race	Bachelor's	13	Female	Toddlers
Bianca	27	White/Caucasian	Bachelor's	3	Female	Infants

The researcher began the recorded focus group interview by again briefing all participants on the consent form (see Appendix B) and made sure each participant understood their rights as a participant. The researcher clarified that participants could leave at any time during the focus group. Each participant gave a verbal “yes”, to acknowledge they understood their rights. Once everyone had given a verbal “yes,” the researcher began asking questions from the interview protocol (see Appendix D). Both interview sessions followed the same procedures and each focus group interview lasted approximately 40 minutes. The interviews were audio-recorded on a secured laptop as well as on a digital recorder.

### **Data Analysis**

After data were collected from both focus group interviews, the audio recordings were sent to Rev.com, an online transcription service used to transcribe speech to text (Rev, 2010). Both focus group interviews were transcribed verbatim. The researcher was provided with a digital file of the two transcripts. Once the transcripts were received, the researcher followed the analytic steps as laid out by Clarke and Braun (2013) for a detailed thematic analysis of the data. These steps included familiarization of the data, complete coding, searching for themes, reviewing themes, and mapping and finally defining names.

During the initial phase of analysis, the researcher used a deductive approach to identify data which were relevant to the three research questions. The first step included sorting and separating comments related to each research question. Comments ranged in length from a single sentence response to several sentences in length in which the

researcher considered pertinent to each of the research questions. Once initial comments were sorted, the entire data set was examined again to see if anything was missed. The researcher then took an inductive approach and started coding the data to generate initial codes. Codes were developed by looking for relevance and similarities among responses related to the research question.

At this point, the researcher had a collection of themes and sub-themes pertaining to each research question. The final stage in coding was organizing the coded data (Clarke & Braun, 2013). Themes were merged together based on relation to each other (within and across research questions). Themes that did not have enough relevance or support were discarded or merged with another theme. At this point, the themes were defined with names.

## Chapter 4

### RESULTS

The purpose of this study was to further investigate teachers' perceptions of nutrition education in the field of early childhood education. This study focused on one private preschool in the Sacramento region. This chapter reviews the themes that emerged during the focus group interviews pertaining to the three major research questions: (a) What do teachers know about nutrition guidelines in early childhood education?; (b) What are teachers' beliefs about their roles and responsibilities in children's nutrition education; and (c) What are teachers' practices to address nutrition education in the classroom?

#### **Analysis**

The researcher analyzed the data from both focus group interviews using a thematic analysis approach adapted from Clarke and Braun (2013). During initial coding, the researcher used a deductive approach to identify and categorize participant responses relevant to each research question. Subsequently, the researcher then used an inductive approach to code for themes and patterns within the data for each research question.

#### **Teacher Knowledge of Nutritional Guidelines in ECE**

At the start of the focus group interviews, teachers first discussed what they knew about nutritional guidelines and policies in early childhood. Overall, teachers did not describe knowledge of any specific guidelines, but reported using governmental resources such as MyPlate as resources for curriculum. MyPlate uses visuals to inform

Americans of nutritionally balanced meals. Both July and June reported using MyPlate for informing their curriculum. June was knowledgeable about the MyPlate website and believed it to be an excellent resource and emphasized this by stating, “the website has everything from measurements to how much [children] should be getting.” July also acknowledged MyPlate to be a great resource and recalled other governmental resources which they had used before but could not remember their names. They recalled online government resources for bottle feeding infants:

Yeah, I visited that. I don't know if it was the exact site or a site that was similar to it by the government for bottle feeding, the standards for that, but not necessarily for foods for infants. It tells you what age to introduce it and how to start off, but it doesn't say, the amount of solids you should be giving the infant or not that I've seen or heard of anyway.

Other teachers reported using other online resources that were not government-affiliated to inform their curriculum.

Even though teachers did not know about broader policy guidelines, they described guidelines that pertained specifically to practices at the current school. For example, Natalia said:

For here, I don't really know that we have, I mean I think there are particular guidelines that we do have that we follow. We always have two food groups when serving food. That's not required for children who bring their own lunch and we don't necessarily supplement their food because that's their parents' choice. We do have guidelines for a snack menu. A suggested snack menu with suggestions,

and we are asked to give food groups. Other than that, I don't know more about [guidelines and policies].

July was also knowledgeable of the school guideline requirements of two main food groups needing to be served during meal offerings as well as the suggested snack menu which was provided by the school:

I know we have suggestions and it goes by that we should serve [which is] at least two different food groups and [it tells us] the portion [size]. Whether or not everyone abides by it as strictly as suggested, I'm not sure. I'm [also] not sure if [the suggestions are] something because we're accredited [or] why it's in place. I don't know, and I could learn more.

July acknowledged the accrediting body most likely set the school guidelines for the menu and possibly the serving suggestions but was not sure where specifically the guideline stemmed from. Kelly further mentioned, "Our campus is meat-free, so we are only dairy. I feel that that is a guideline for our students and us." Kelly acknowledged that the school site has its own requirement of being meat-free. Bianca, an infant teacher, commented to not being knowledgeable about any guidelines; however, she referenced a list of food items parents could supplement for different proteins due to the campus being dairy-only:

There is almost virtually nothing for infants except for a suggestion lists that we can give to the parents. [Parents] do provide all the food [for their infant child] and are programmed for infants (they know what their child likes or will eat), there is not much that we go off of except for what the suggestions lists says.

The list is provided by the school to the parents upon enrollment into the infant program. It is a way for the campus to ease parents into the transition of meat-free meals for their children.

Teachers were also knowledgeable of guidelines relating to their past experiences in other ECE programs. For example, June said:

I know from previous sites that I've been at there is like a guideline of amount that a preschooler should be getting and that a toddler should be getting of milk product or the fruit and vegetable product and everything of what should be served if we are serving meals. I know there's a chart that says the amounts, but I don't know the amounts.

She acknowledged the guideline of having two food groups for the current school and also mentioned similar guidelines from another place she had previously worked. She recalled these guidelines related to amounts needed for proper serving sizes, but she was not sure where to find more precise information.

Wanda provided a different account of her experience working as a cook in a for-profit private school:

I was a cook at [another] school, so I cooked for about 300 kids, and all of our serving utensils were serving sizes, for the main dish or the vegetables, so that made it easier to give the kids the right portions.

When asked if this was something that the school decided to implement or if it was a national or state standard to provide those utensils, Wanda was not sure:

It was what was in the kitchen when I was cooking because that's what we had, so I don't know if the school made the decision, I don't know if it was the chain- because it was a chain private school- or it might have just been the decision of the director of the school.

Erica's experience working previously for an in-home daycare added a different account regarding particular guidelines. She mentioned needing to follow specific recommendations if they were participating in a food program:

I know for home daycares, they do have certain guidelines because they, there [are] food programs that you can enroll in, and the food program will give you a list of foods that you should be serving and even with the milk, you used to be able to serve two percent milk, and now it has to be one percent milk. When they come and inspect, they'll have to see the gallon of milk to make sure you have the correct milk...even breads now they need to say 100% whole wheat, or multi-grain, before you could serve any bread. It's specific guidelines to what you can serve the kids.

She mentioned the guidelines as being part of a governmental food program in which the daycare was enrolled. She recalled changes in food and drink items which were previously allowed to be served, to now, items that are not allowed.

Many teachers reported knowing specific guidelines for the school, used their past experiences, and what they knew from previous work experiences to draw on their knowledge of nutritional guidelines. Teachers did not know how broader policies and guidelines were related to the site-specific practices, but one teacher mentioned the

guidelines and practices could be associated with the accrediting body. Teachers also acknowledged they were not sure why specific guidelines had changed, while others had not, but recognized that policies and recommendations were moving towards more healthful choices for children.

### **Teacher Beliefs about Their Roles and Responsibilities in Children's Nutrition Education**

Teachers described their roles as educators in teaching nutrition education to young children. They often mentioned that role modeling was a way to execute the delivery of nutrition education and this played a big role in the classroom. June, a toddler teacher, said, "it is just like modeling any other behavior, they're going to see that you are eating things and want to try new foods - or at least that's the idea." June also added, "having the ability to order a variety of foods for their snacks that the children may not be used to or that she considers healthy helps to provide the children with additional healthy options". Stating "foods such as avocado, cottage cheese or mangos" are things she likes to order from their procurement officer or different things that the children may not be used to eating. She says, "I try to order foods to try and see if they will eat them and also, if they see me eating it, then a lot of the time, they will want to try it at least."

Wanda agreed with June and felt that modeling nutritional behavior was necessary for the children, especially with older children. She felt that if a child in the class said, "oh that is disgusting," then other children could "follow their behavior, but if a teacher was modeling the behavior and showed how tasting the food was good or that they even did not like it then the children may be willing to try new things." Several other

teachers also agreed and felt that modeling nutritious behavior was necessary, and modeling eating novel foods themselves might make the children more likely to try them.

In addition to modeling nutritional behaviors, other teachers felt that part of their role was to be their advocate and to encourage empowerment of food choices. July felt that by “talking to children about what different foods can do to our bodies can help children with the connection” and felt their role was to empower and help children connect to nutrition:

Recognizing healthy choices and empowering them to feel good and having a connection to where your food comes from, so they get excited about their food is our role. Also, how to prepare simple things so they get even more excited about it. Also, I think it’s definitely how to recognize healthy choices and showing them different varieties of healthy food choices, so they know theirs’s a lot of great things out there.

Teachers generally believed that the children could relate nutrition and health to their growth and development. July said they can have conversations with the children and tell the children “yeah, calcium will make you have super strong bones and this protein will make you have super strong muscles, and the children will be into it.” July felt that if you relate nutrition and foods to the children, they are more likely to have that connection and may be more willing to try new things.

Several other teachers agreed about focusing on identification of healthy choices and having conversations about food with the children was part of their roles and

responsibilities. June added that providing children with a purpose for why we eat food is also important which comes out in conversations:

Talking about foods that give us energy and foods that are going to help our bodies digest our food which helps us go to the bathroom is what I like to talk about. I also like to talk about the healthy foods versus not so healthy, so the foods that we start with are the healthy foods and the fresh food, which teaches about the purpose of why we are eating certain foods.

Furthermore, teachers felt exposure to nutrition was part of their role as an educator. Carina, a preschool teacher, says she believed exposure at an early age should be the focus of nutrition education in ECE and was part of her role:

I think we need to expose them, especially at his young age. Telling them what's green foods and what sometimes foods are, they're just so young to even know what's nutritious and what's healthy for them. I think just exposing them early.

Catalina also felt her most prominent role was to "expose and educate" the children and to educate the parents if they need it:

I think our biggest role in to educate the [children] and also educate the parents if they need it. [For example] if we notice healthier options are not being sent then we can educate and talk to the parents if we need to. Also, exposure in the classroom, like giving them healthy snacks and trying to incorporate healthy foods.

Overall teachers felt their roles and responsibilities as educators were to expose the children to healthy options, model nutritional behavior and empower the children to

make healthy choices. Most teachers felt part of their role and responsibility was to introduce healthy options with the ability to make informed healthy choices. Many teachers focus on exposure to a variety of foods and had conversations with the children during mealtimes, free-play, and curricular time. Teachers believed that by focusing on healthy choices, empowering the children to feel good about the foods they are eating, and exposing the children to a variety of healthy options would lead children to be able to make their own informed decisions.

### **Teacher Practices to Address Nutrition Education in the Classroom**

Almost all teachers mentioned teaching about nutrition and food in some way throughout their day. The topic of food and nutrition was not the only important thing teachers focused on in the classroom. Results revealed that the delivery of nutrition education is done in two different ways: through specific nutrition-themed curriculum and having daily conversations around nutrition during mealtimes. Many teachers reported to have at least one nutrition-themed unit or a health component in their curriculum each year. Teachers mentioned that the themed component was asked by the ECE director but was not a requirement of the guidelines of the school to be a part of their curriculum. Several teachers reported to having more than one nutritional theme incorporated throughout their year.

The delivery of nutrition education looked different based on age group taught by teachers. Teachers reported having conversations during mealtimes, during free-play, and during designated curricular time for nutrition education in the classroom. Barbara, who

works with four- and five-year-olds said her class discussions focus around developing “healthy choices”:

We focus a lot on healthy choices and learning about fruits and vegetables. We talk a lot about healthier foods that we eat all the time, and maybe some foods that we can have but not all the time. Then [we focus on ] foods that are not so good for us. [During circle times] we typically have a theme that is centered around nutrition and open it up to a class discussion. We talk about what kinds of food the [children] would think are green light foods -something that you want to eat all the time that is good for you. We talk about growing food that makes you healthy and strong. Typically [the children] will throw out a bunch of fruits, veggies and proteins when referencing growing foods. We also talk about yellow-light foods, which are foods that you can have but maybe just in moderation. Then we talk about red-light foods, which are treats, chocolate and ice cream. We talk about having those kinds of foods every so often and that sort of thing. We also talk too about if [a child] said ice cream was a green-light food then how would a person feel they had ice cream all the time? A child might respond with “oh you probably [would] feel really, really bad and your tummy might hurt”.

Barbara, along with several other teachers, commonly referenced the traffic light when discussing food and teaching nutrition in the classroom. Teachers expressed using the traffic light as a symbol the children were familiar with. Teachers expressed the commonality of using the traffic light was not a requirement from the school, it just so happened that they all had been using similar symbolic phrasing without realizing it.

Barbara also mentioned that conversations and discussion about food move with the children during mealtimes as part of their routine:

During lunch time when all the children bring their own lunches we have the kids focus on their growing food first, typically that's their main course. At the beginning of the year we do a lot of reminding but as the year goes on, they are used to us talking about [their growing food], but it all depends on what is in their lunches.

As part of teachers' practices, most of them commented on building their nutrition curriculum from a variety of resources, including the use of MyPlate, as mentioned previously. Natalia, a preschool teacher commented on the development of her nutrition curriculum and said, "it is hard to say where we pull [curriculum] from, or [maybe] we have developed it on our own because we thought it was a good way of explaining it to the children." She goes on to say that "the curriculum does not necessarily come from a specific place or resources; it has developed through the years and it is not from one particular resource". Several other preschool teachers agreed and reported to build their nutrition curriculum from other online resources such as [pinterest.com](https://www.pinterest.com) or use curriculum knowledge from previous places of employment to build their curriculum.

Catalina, an older-infant teacher, described her nutrition-themed curriculum for her students as being more "basic" and a lot of the time they spend narrating to them during play or during mealtimes:

It's a little more basic but we will do circles with [the children] and focus on healthier choices or smart snack foods. It is more of narrating to them then

having full discussions. I think a lot of it is just during play and having different pretend foods in the classroom and just talking to them about it while they are playing. It sets the foundation for things like what Barbara is doing in the pre-k and the older classrooms.

In addition to having a specific nutrition-themed unit, several teachers described their mealtime environments. Ellie, a younger-infant teacher, described her practices during children's meal or snack time:

For infants who are over one year old, we do set a table and all eat together. Even though all their food on their plate are different they are learning the social of, "I can't take your food even though I want it". We might have milk or we all might not have milk and maybe that's interesting over there, maybe it's not. Some foods we do provide, then we all have similar foods on our plates and [the children see] what that looks like.

Ellie points out that her children are learning the social aspect of eating together and most of the time is spend narrating to the young infants on similarities and differences that they are seeing and teaching table manners. All of the infant teachers agreed and reported the younger the child, the more effort it took on their part to narrate what the children were seeing and what was happening during mealtimes. June, a toddler teacher, similarly related to teaching the social aspects of eating and adding to the conversations that take place during mealtimes:

We like to talk about what each person has [in their lunch] and compare, "oh you both have sandwiches" or "everyone has pasta today"... we like to have a lot of

conversations [during mealtimes]. Even though we are having conversations we are still eating and we're talking about how our foods smell, how it tastes, what color it is... so we have lots of conversations about our food.

Natalia, a preschool teacher, added that in her class they share food in a similar social way:

Yes, we do that too. In a preschool classroom I encourage the kids to have conversations at the table while their eating. I always tell them "oh it's nice to have conversations at the table while we're eating our food. Maybe ask your friend about what they have in their lunch", and have them talk about food or I'll comment about a food that they have in their lunch that I also like to eat at home or how I like to prepare it, or if I know something about a certain food. Like everybody says "carrots are good for your eyes" or "dairy is good for your bones". If [the children] move away from the conversation [about nutrition] I will always try and bring the discussion back to food.

Teachers focused on building health literacy through the use of specific language when teaching nutrition education. Health literacy is the ability to obtain, process, and understand the necessary health information to make appropriate independent decisions (USDA, 2017). Teachers reflected and felt that using language the children could relate to was a way to better connect to children on their level. As mentioned previously the reference of a traffic light had been used when talking about healthy choices. Green foods were foods you could eat all the time, yellow a sometimes food, and red not all the time food. Natalia added:

I'm glad to hear that we are kind of all using similar phrasing where it's like, sometimes food maybe a "treat food", like a dessert or something like that. We talk about how foods work to help us grow and give us energy and what food does for us besides "eating healthy and making this choice and then making the sometimes choice." It is [helping them understand] what food can do for us. What food and drink does for our bodies, for the older kids especially, because they're starting to understand a little bit more those types of things.

In agreement, Erica, a resource teacher who helps out in various classrooms, added how she sees this happening in the classrooms she goes to throughout her day:

I do see this happening a lot already with the old, maybe two-to four-year old's, because when they are eating their lunches they will say, "oh is this a first-choice food or a second-choice food?". They are already trying to get that into their minds. Some of them will say, "this is first choice, right?", and it's as though they are already learning what's healthier [in their lunches].

As part of their practices, all teachers reported to have conversations about food and nutrition throughout their day. The delivery of nutrition education looked different in each age group. Conversations took place in different times of the day for the students, but overwhelmingly, all teachers reported to be incorporating daily conversations around food and nutrition with their students during mealtimes, free-play, and during scheduled curricular times. Teachers focused on specific nutrition language the children could concretely understand which helped the children understand differences in food options.

## **Barriers and Opportunities for Improvement**

An unexpected finding of the study was report of the barriers teachers felt they faced, and the desire to improve nutritional standards with educational opportunities. In order for teachers to be more effective in their roles, teacher felt a need to be educated on opportunities to educate parents on the topic of nutrition. With the addition of the campus being meat-free, challenges arose in supplementing children's nutritional needs and providing parents with examples of what this looked like. Bianca, who was one of the younger-infant teachers, felt focusing on an introduction to a variety of foods and having a well-balanced meal for the children was important, but felt there was a lack of variety of foods when parents packed the lunches:

I think for infants, one of the biggest things that I have come across is getting them introduced to a wide variety of food, especially fruits and vegetables. When the child starts getting two snacks and a lunch, incorporating a well-balanced lunch the children want to eat becomes important. However, making sure the parents know what that looks like is also important. Parent education is one of the things [we do] in our classroom.

Natalia added that sometimes as teachers' challenges arise especially with children bringing their own food and parents packing lunches:

With parents providing lunches for their child, it is sometimes hard to supplement and decide what may be a "healthier" option for them in their lunches. What we may consider as a healthier option may not be true to what the parents consider as healthy.

July agreed with Natalia and Bianca saying, “as a teacher, you only have so much control over what goes into their lunches, but I definitely think we can influence the kids.” In order to improve overall nutritional behaviors and understanding teachers felt that attention to educational opportunities concerning nutrition education was needed to better serve the families.

In addition, although it had been made clear that participants lacked particular knowledge of governmental guidelines, discussion revealed that participants valued the importance of receiving clarification of nutritional guidelines and valued the importance of how policies could better benefit them and the children. Wanda felt that “there were enough policy and regulations, but there needed to be more education” around nutrition. She felt there needed to be “changes that were going to motivate people to want to make healthier choices and there needed to be price regulations” saying, “that is what makes people buy the ‘un-healthy’ items.” Natalia agreed with what Wanda said but felt that policies and regulations were only as good as the resources available to the teachers:

I think a policy and regulation is only as good as the resources that we have to execute those types of things. For example, being a private school, we’re still bound to a budget, so perhaps graham crackers although they might not be as healthy as some multi-grain sesame with beets, it would be better, but that’s going to be more expensive. If it were outside of our realm and if there are guidelines, policies and regulations, it may be challenging sometimes to stick to those things because, I mean how much support is the local government or state going to give in order for centers to execute those types of things.

The teachers in the current felt that they do the best they can with what they are given and try to provide the children a variety of options which contain two different food groups. June stated, “I think we can all agree that we would like more education on nutrition and nutrition regulations and guidelines for our age groups.” She felt as though adding workshops into staff development days would be a great way to educate teachers on nutrition education. Ellie, an infant teacher, agreed, stating:

If we are educated, we can take that education and teach our parents and teach our kids about it and it is all going to trickle down. It is going to have that connection overlap, so then, hopefully it is going to be reflected in the foods that’s here.

Catalina suggested nutrition education should be implemented in ECE classes when one is studying to become an early education teacher (e.g., “Maybe even having a class specifically on nutrition and how it affects the children and their bodies”).

Additionally, Natalia felt that nutrition is a secondary focus in education, and the focus has been on other developmental priorities for children:

I think nutrition might be a small piece of what we get in our education. It just goes to show that it is secondary. It’s slightly secondary to other things that we feel are more important. But I mean the food is the thing that’s driving the children, and giving them energy, and it is a very big, much bigger piece of our day, and their day, than I think we think, and I think having this discussion is sort of the pointing that out... I feel as though I am bound by what we are given here to serve the kids, but if it [nutrition] were required part of our education, maybe we would feel a little bit more like it was actually more important.

Teachers suggested that to bridge some of the gap there should be a focus on educational and professional development opportunities concerning nutrition education for young children, which could better clarify guidelines and policies.

### **Summary**

The primary findings were that teachers lacked specific knowledge of broader governmental guidelines but were knowledgeable of guidelines pertaining specifically to the school site. Teachers were particularly knowledgeable of the requirements of being a meat-free campus and needing two food groups when providing snacks for the children.

Teachers discussed the importance of recognizing healthy choices and used specific language as a foundation for children's nutritional knowledge. Health literacy was promoted by using symbolic ways to represent nutritional terms in which teachers felt children could relate to and make connections between their learning and development. Nutritional conversations took place around mealtimes, during play, and during scheduled curricular times. Teachers working with older children reported having more in-depth conversations and involved the children more in the learning process. However, infant teachers did most of the talking by labeling and narrating to the children.

Teachers predominantly drew from their personal experiences within ECE settings to guide their practices. Teachers believed that establishing a foundation for nutrition education and exposure was influential in early childhood education. Teachers felt that beginning in infancy, an introduction to a variety of foods and having well-balanced meals were the most important as well as parent education. Individually, some teachers felt empowering children to know how foods help nourish their bodies and

advocating what food can do to help us grow, and how foods help the insides of our bodies was necessary. Teachers felt that allowing children to learn where their food comes from and how to prepare foods gave them a sense of pride and ownership over nourishing their bodies.

Furthermore, teachers believed that their role as early educators was role modeling. They felt that by modeling specific nutritional behaviors, children were more likely to follow suit. Additionally, teachers felt as though they had a significant impact on children's nutritional habits and sometimes were face with barriers. Some teachers felt that nutrition education played a more prominent role in their teaching day than they realized and felt attention to the subject of nutrition education was needed. Teachers felt that opportunities for professional development and education were needed concerning nutrition education in ECE, and it played a role in their beliefs about nutrition education.

## Chapter 5

### DISCUSSION

The focus of childhood obesity has become prominent in recent years due to the increase in publicity in legislation and media coverage. Strategies to address the issue of childhood obesity and other related health concerns have been on the rise. Early prevention has become necessary in addressing and mitigating a child's short-and long-term health concerns related to childhood obesity (Tyson & Frank, 2018). More specifically, preventative programs have been established within the United States educational system to further mitigate the prevention of childhood obesity (California Department of Education, 2020; USDA: Food and Nutrition Services, 2018). Research has suggested early intervention is key to establishing healthy behaviors and habits that can last a lifetime (CDC, 2015; Sisson et al., 2017).

The purpose of this qualitative study was to understand teacher perspectives of nutrition education in Early childhood Education (ECE) in one private childcare center in the Sacramento region. As schools have become the backdrop for providing children with nutrition education, and society becomes increasingly reliant on teachers to deliver nutrition education to our students, it has become important in finding out what teachers are doing in the classrooms to help children develop nutritional habits (Cunningham-Sabo, Balgopal, Seeding & McGuin, 2017). This study sought to understand early childhood educators' perceptions of the role of nutrition education in their program. More specifically, the study sought to understand one school site's nutrition education program

and their nutritional practices in the classrooms, and whether their teachers' perceptions were associated with their approach to integrating or not integrating nutrition into their curriculum. Furthermore, the study sought to understand how teachers' perceptions might influence children's nutritional health.

Bronfenbrenner emphasized the importance of the person, process, context, and time (PPCT) for children's development, which can include their nutritional health and well-being. Bronfenbrenner argued it is essential to think of a child's development and learning through the context of interlocking layers which can have bi-directional relationships on a child's development (Tudge et al., 2009). If we look at the broader system of childhood obesity prevention, we can see how each layer interacts with each other to impact a child. Based on previous research, children's environment (such as school) can influence them, and teachers have become the forefront for nutrition education delivery which has the potential to influence children in relation to PPCT (Cunningham-Sabo, Balgopal, Sedding & McGuin, 2017). In relation to the findings, the ways in which teachers have conversations about nutrition and help the children feel empowered over the foods they eat can have the potential to impact children's nutritional behaviors over time. Having conversations about nutrition can help children feel empowered about their food choices; thus, they may be more inclined to feel good about what they eat and be more willing to try new foods. This has a potential to positively impact children's overall nutritional health.

This chapter discusses the findings in the study in relation to the existing literature on teachers' perspectives of nutrition education within our education system. The chapter concludes with a discussion of limitations of the study and areas for future research.

### **Teacher Knowledge of Nutrition Guidelines in ECE**

The findings suggest that teachers were relatively well-informed of guidelines pertaining specifically to the school site. Teachers were particularly knowledgeable of the need to serve the children two-different food groups during snack time as well as the school site being a meat-free campus. Teachers also acknowledged that the need for two different food groups and the menu posting stemmed from the NAEYC accreditation. The findings also revealed teachers lacked knowledge of broader governmental nutritional guidelines in ECE. The lack of broader knowledge of dietary guidelines and policies was consistent with research stating that wellness policies are not rigorous enough and regulations following strict nutritional guidelines should be set forth (Larson et al., 2011; Levi, Segal, St. Laurent, & Rayburn, 2014). In contrast, research shows teachers in programs such as Head Start, have shown high rates of understanding of broader governmental guidelines as well as school site guidelines (Fallon, et al., 2017). This could be due to the fact that Head Start programs are federally funded ECE programs that set higher standard policies than non-government funded childcare programs. Head Start programs are required to follow federally regulated nutrition recommendations and part of their mission is to promote healthy behaviors and nutritional environment outcomes (Fallon et al., 2017; Lisson et al., 2016). If private programs, such as this one, followed similar and stricter guidelines and regulations as

Head Start programs, teacher may have been more cognizant of broader governmental guidelines.

Although knowledge does not always guide behavior, the literature and findings suggest that programs which have higher guidelines and regulations in place for their teachers help teachers to adhere to the specific guidelines and recommendations (Haack & Byker, 2014). Federally run programs as well as privately owned programs should set higher guidelines and regulations in order to strengthen knowledge of nutritional guidelines. Schools should educate teachers on where their guidelines are stemming from and future guidelines in childcare centers across educational settings should promote behavioral and environmental strategies that align with DGA guidelines to better serve our children (Haack & Byker, 2014).

### **Teacher Beliefs about their Roles and Responsibilities in Children's Nutrition Education**

Teachers help foster healthy behaviors and lay the groundwork in establishing children's early nutritional experiences (Sisson, Smith & Cheney, 2017; Fallon et al., 2017; Erinoshio et al., 2018). There are many mixed feelings about the roles ECE teachers play in nutrition education (Hall, Chai & Albrecht, 2016). Some teachers feel nutrition education is important but do not feel they have a big impact on children's overall dietary habits and behaviors (Perra et al., 2015). Some believe they have little impact on children's nutritional behaviors (Sisson, Smith & Cheney, 2017). While other teachers feel their roles are to educate (Hall Chai, & Albrecht, 2016; Perra et al., 2015). In the present study, teachers felt their roles and responsibilities as educators were to expose

children to a variety of foods, be a role model for healthy behavior, and empower children to make healthy choices. Teachers felt that modeling healthy nutritional behaviors was like modeling any other behavior which could lead children to likely follow suit, especially with trying novel foods. This is supported by previous research that suggested ECE teacher from federally run Head Start programs alike see themselves as role models, advocates, and motivators (Derschied et al., 2010). Similarly, other research states that elementary teachers felt their roles were to model, coach, advocate, and empower children (Hall, Chai & Albrecht, 2016; Perra et al., 2015). In contrast to these roles, some teachers in Head start programs felt that although nutrition education was part of the Head Start mission, their main role as an educator was to support children's overall readiness for Kindergarten than to develop healthy habits (Sisson et al., 2017).

Furthermore, the findings suggest that teachers' roles and responsibilities may differ based on the age group the teachers taught. Of the teachers in the current studies, those teaching younger students (infants and toddler), reported their primary role as an educator was in exposure. They felt that their role was to introduce, infants in particular, to a variety of foods, to model nutritional behavior and label and identify foods during specific times of the day. Infant teachers in particular felt a big part of their role was in narrating to the children everything they saw, especially because they didn't have the language to repeat. They felt that it was part of their responsibilities to provide them with a basic foundation of nutrition by narrating and labeling foods. Toddler teachers felt similarly and included part of their role was in having back and forth conversations

around nutrition during mealtimes, play time, and curricular time. The preschool teachers interviewed expressed similarities in roles to toddler teachers. However, their conversations were more sophisticated, focusing on awareness of where their foods came from and how foods help their bodies. Teachers felt by doing these it would help children to be able to make their own informed decisions in relation to nutrition.

To date, current research has yet to distinguish differences in teacher perceptions of their roles and responsibilities across different age groups with regard to nutrition education. Similarities in ECE teachers' perceptions of their roles in modeling nutritional behavior during mealtimes, play time, and circle times has been shown. Teachers in the current study and those in Head Start programs have lesson plans with planned nutritional activities and have scheduled mealtime routines where the conversation of nutrition is talked with the children (Derscheid et al., 2010). One area where the current private center differs from Head Start program teachers is the ability to consult with a dietician for classroom ideas (Derscheid et al., 2010).

### **Teacher Practices to Address Nutrition Education in the Classroom**

Teachers have become the forefront of nutrition education delivery, especially in our K-12 and Early Childhood Education system. As childhood obesity remains a concern it has become essential to consider current approaches to teaching nutrition education and understanding the context of teacher perceptions concerning nutrition education in the classroom (Perra et al., 2015). Because over time what we learn, how we learn, and specific behaviors we develop to nourish our bodies, can influence developing healthy habits and the outcome of healthy behaviors (Tudge et al., 2016). One of the

primary goals of this study was to find out teacher perceptions of nutrition education and their subsequent nutritional practices in the classroom.

One interesting theme that emerged was the way in which teachers addressed nutrition education in the private center was similar to the research found in those teachers of Head Start programs. It is clear from the results that teachers felt they had many roles and responsibilities in children's nutrition education. Teachers discussed the need for children to be able to recognize and label health food choices. They also discussed the need for the children to be able to identify healthy options and the ability to decipher between choices that may be okay to eat in moderation and some choices that were unhealthy options. Teachers used health literacy to connect children's learning with nutritional learning by using symbolic representations the children could understand. Teachers felt in order to address nutrition they needed to expose the children to what nutrition is in order for them to be able to make informed decisions. They did this by implementing a nutritional theme into their curriculum and having a designated time in the year to talk about nutrition; they did it through having daily conversations during planned mealtimes and playtimes throughout the day.

A clear theme that arose from the data suggested that many teachers believed that focusing on healthy eating options was best practice, which subsequently lead to their methods of teaching nutrition education. Teachers differed in their approaches to implementation of nutrition education, but all teachers focused on healthy choices. Some teachers chose to implement one nutritional theme in their curriculum, while a few others choose to implement multiple themes in regard to nutrition throughout the year into their

curriculum. It was unclear if infant teachers included a nutrition themed component in their classroom curriculum. Although infant teachers did not disclose a nutritional themed curriculum component, they did provide an account of how they focused on nutrition in their classroom.

Infant teachers felt their focus was on implementing nutrition education into the classroom was in providing the children with a variety of foods when children started eating solid foods and by educating parents. But teachers felt that they lacked guidance in providing parents with an education on nutrition. They felt if they were educated more, they could educate the parents better. Consistent with previous work, teachers in Head Start programs felt similarly about the lack of guidance in educating parents on nutrition. Head start programs primarily serve low SES families and educating parents on proper nutrition that is not expensive poses challenges for teachers (Derscheid et al.,2010) Although the present study does not disclose the student body population or SES of their clientele, teachers are faced with having to provide education to parents on nutrition for their children.

Toddler and preschool teachers implement nutrition education in the classroom with modeling nutritional behavior and having conversations about nutrition with the children throughout their day by labeling foods and talking about foods that nourished our bodies. Some teachers take it a step further and show the children how foods can help nourish their bodies by telling them what that food is doing to help in their development. Teachers empower the children by telling them where their food comes from and have them take pride in it. Teacher do this by having cooking activities with the children or

planting things in the ground. These findings are consistent with other Head Start programs classroom teachers' perspectives of using food to help the children connect by gardening or cooking with the children for curriculum purposes (Derscheid et al., 2010; Lisson et al., 2016).

### **Unexpected Findings**

Research showed teachers in elementary schools commonly report to lacking time for teaching nutrition education on top of their core subject matter (Perra et al., 2015). In ECE nutrition and feedings seem to be saturated in a child's day while at school. Nutritional practices are the primary mission of Head Start programs and are integrated throughout the day of a Head Start child (Derscheid et al., 2010). Similarly, teachers in the present study seem to have saturated their children's day with conversations around nutrition during mealtimes and playtimes.

Teachers report that they value the importance of nutrition education in both elementary and in ECE. However, they also feel a need to encourage health educators to work with classroom teachers to design, implement and evaluate nutritional curriculum to better facilitate higher quality nutrition education for the children (Hall, Chai & Albrecht, 2016). Similarly, the findings in the current study revealed that teachers valued the importance of receiving clarification of nutritional policies as well as how the policies could better benefit them and the children. Teachers felt more opportunities for education and professional development was needed to better serve the children. Teachers of Head Start Programs felt similarly suggesting additional opportunities for incorporating developmentally appropriate curriculum for the delivery of nutrition education

(Derscheid et al., 2010). In addition, suggesting opportunities for improvement in the quality of food presented to children and incorporating teachers and children in the decisions (Larson et al., 2011).

### **Limitations**

This study is not without limitations. First and foremost, the results may not reflect the practices and beliefs of all teachers or quality of standard childcare centers across the region. The present study is only a reflection of one private center in the Sacramento region amongst many other private centers. The findings are a result of how these specific teachers feel and how they represent nutrition education in their career path and the current nutritional practices of the center.

The sample size of the current study was small and was limited to one ECE center in the Sacramento region. The goal of this study was to gather a collective perspective of one privately operating program's nutrition education program in the hopes of making improvements to the current program. The current study is one step towards understanding how we are mitigating childhood obesity and is the first step into understanding nutrition education in private educational settings.

Focus groups offered a collective approach to how the current school integrates nutrition education into their program. It offered insight into a collective approach to what teachers do daily to provide children with nutrition education. However, balancing different speakers and giving everyone equal opportunity to share their ideas was a challenge. If this study were to be done again, one might consider offering one-on-one

interviews instead of focus group interviews. Individual interviews may have yielded more time devoted to more in-depth conversation and time with the topic.

Additionally, to answer whether or not teacher perceptions are associated with their approaches to integrating nutrition education, including an observational component might be necessary. As noted in Fallon et al. (2017), self-report and observation can sometime yield different outcomes. Teachers can feel as though they are doing one thing, but in practice it may look differently, and a comparison component could have answered this question. Having a conversation about nutrition is only one part of the approach to seeing what teachers are doing in the classroom in regard to nutrition education.

### **Implications for Future Research**

The current study focused on teacher perceptions of nutrition education in ECE. It was clear from the results that although teachers lacked knowledge of nutritional guidelines, they value the importance of educational opportunities. Future research opportunities could lend a hand in developing professional development opportunities for ECE teachers, not only in the Sacramento region but across states. Moreover, opportunities for professional development concerning nutrition education at the current school could also benefit teachers. Furthermore, public policy improvements with regard to nutrition education may provide a higher quality nutritional foundation for our very young children.

### **Conclusion**

Currently, in the United States, approximately 17% of children between the ages of 2-19 fit the benchmark for being overweight or obese (Huang, Lanza & Anglin, 2013;

Levi, Segal, St. Laurent, & Rayburn, 2014; Ogden et al., 2014). In recent years, more children are increasingly spending time in the care of a teacher at an earlier age than ever before (Sisson, Smith, & Cheney, 2017; Swindle et al., 2018). Efforts have been established throughout our education system to mitigate childhood obesity; however, in ECE childcare programs lack continuity and therefore policy and regulations differ with regard to nutrition education in our schools and across childcare centers.

Teachers play an essential role in shaping children's nutritional habits (Sisson, Smith, & Cheney, 2017). The current findings in this study suggest that teachers lacked specific knowledge pertaining to broader governmental policies about children's nutritional needs but knew of specific guidelines related to their current school. Teachers felt they played a significant role in young children's dietary habits and understood that they play an essential role in shaping the lives of these young children they serve. This led to teachers valuing the importance of educational and professional development opportunities in order to know what it means to be "healthy." Teachers felt there should be more education and training for teachers, which could subsequently improve quality of care. Future research opportunities could lead to developing more comprehensive and well-regulated nutrition education programs for all ECE programs which could lessen the gap in nutritional disparities in our educational system, and further reduce the risk of childhood obesity in the United States.

## Appendix A

### Recruitment Letter

Dear Teachers,

My name is Mallory Adams. I am an ECE teacher and a graduate student in the Child Development department at California State University, Sacramento. I would appreciate your participation in my master's thesis research project, which aims to investigate the perception of teachers on the role of nutrition in early childhood education (ECE). Your participation is completely voluntary. If you choose to participate in this study, it will involve a sit-down focus group interview answering open-ended questions and completing a demographic survey. The focus group interview will take approximately 30-60 minutes of your time, and you will be contributing immensely to an important and growing body of research. If you choose to participate in this study, your personal information and your demographic information will not be shared with anyone.

Thank you so much for your time and support!

Please contact me through phone or email if you are interested in participating.

xxx-xxx-xxxx- please leave a message and a call back number

[malloryadams@csus.edu](mailto:malloryadams@csus.edu)

## Appendix B

### CONSENT FORM

#### Teacher Perception of the Role of Nutrition Education in

#### Early Childhood Education Settings

My name is Mallory Adams, and I am a Graduate Student at California State University, Sacramento, Department of Education. I am conducting this research study to understand the role of teacher's perceptions of nutrition in Early Childhood Education( ECE) . If you volunteer to participate, you will be asked to participate in a sit-down focus group interview. Your participation in this study will last approximately 30-60 minutes.

Your participation in this study is voluntary. You have the right not to participate at all or to leave the study at any time without penalty or loss of benefits to which you are otherwise entitled. There are some possible risks involved for participants. These risks are not anticipated to be any greater than risks you encounter in daily life. There are some benefits to this research, particularly that you will be contributing to an important and growing body of research in the field of ECE.

It is anticipated that study results will be shared with the public through presentations and/or publications. Information collected for this study is anticipated to be completely anonymous and cannot be linked back to you. The anonymous data will be maintained in a safe, locked location and may be used for future research studies or distributed to another investigator for future research studies without additional informed consent from you. Raw data will be destroyed after a period of 3 years after study completion.

If you have any questions about the research at any time, please contact me at (xxx) xxx-xxxx, [malloryadams@csus.edu](mailto:malloryadams@csus.edu), or Patrick Pieng at [PatrickPieng@csus.edu](mailto:PatrickPieng@csus.edu). If you have any questions about your rights as a participant in a research project please call the Office of Research, Innovation, and Economic Development, California State University, Sacramento, (916) 278-5674, or email [irb@csus.edu](mailto:irb@csus.edu).

Your participation indicates that you have read and understand the information provided above, that you willingly agree to participate, that you may withdraw your consent at any time and discontinue participation at any time without penalty or loss of benefits to which you are otherwise entitled.

Please keep this form as your copy.

## **Appendix C**

### Demographic Survey

1. Age
2. Gender
3. Race/Ethnicity
4. Number of years teaching in ECE
5. Education level
6. Ages of children you teach/ have taught

## **Appendix D**

### **Focus Group Interview Protocol**

#### **Introduction and script**

Welcome, everyone to this focus group interview. My name is Mallory and I'd like to start off by thanking each of you for taking time to participate today. We'll be here for about 30 to 60 minutes depending on the length of dialogue.

The reason we're here today is to gather your opinions, attitudes and perceptions about issues related to your experiences with Nutrition Education in Early Childhood education.

I will be leading our discussion today. I will be asking you questions and moderating our focus group and encouraging further discussion.

I also would like to let you know this focus group will be tape recorded through a cell phone recorder, So please keep the side talk to a minimum to allow for optimal recording. Please also remember to speak loudly enough for the recorder to catch you talking.

The identities of all participants will remain confidential throughout the interview process, please be sure to only use the pseudonym of the fellow participants when referring or referencing a participant. The recording allows me to revisit our discussion for the purposes of analyzing my thesis topic.

#### **Guidelines during the Focus groups**

Before we begin, I would like to state some guidelines for you to follow during the interview.

1. First and foremost, Please be courteous to fellow participants. There is no right or wrong answer.
2. Everyone does not need to answer every single question, but I would like to hear from each of you during the discussion.
3. Please wear your name badge at all time during the interview and only refer to the pseudonym provided on the name tag when referring to the person or referencing a fellow participant.
4. As a reminder, this interview will be recorded so please avoid any side conversations.
5. The interview will be recorded, and your identity will remain confidential.

6. This is a confidential discussion and anything that you say will not be reported to other colleagues or supervisors.
7. Have fun!

Before we begin, I would like to thank you all for taking the time to be here and participating in my research study. I want to remind you; you may skip questions or discontinue participation at any time. Let's begin.

### **Focus group Semi-structured Questions**

- 1) Tell me a little bit about your role in the ECE program. What age children do you work with?
- 2) What do you think should be the primary focus when it comes to nutrition education for the group that you work with?
- 3) What do you feel is the Role that you as a teacher have in children's nutrition? If any?
  - Do you feel you have an impact or influence on their dietary habits?
- 4) What can you tell me about nutritional guidelines and policies that are in place in early education? If none, do you feel there should be? What would that look like?
  - If there are policies in place what do you like or dislike about these policies in place?
  - Does your school have any of their own policies in place for nutrition?
- 5) Do you feel you have enough knowledge regarding developmentally appropriate foods/snacks for the children you serve?
- 6) Tell me about some of the things you do in your classroom to teach about nutrition?
  - what does this look like?
  - How does the age you work with influence what you teach about nutrition education?
- 7) What curriculum and or resources are available to you to use in regard to nutrition?
  - How do you/ do you use them to influence curriculum?
- 8) Can you tell me a little bit about what mealtimes look like?
  - When do children eat?
  - What do children eat?
  - What do adults at the school do while children are eating?

- How do you model nutrition during feeding/meals?
  - What do you think about nutritional value of the foods provided for the children?
- 9) Can you give me an example of the types of conversations that happen around food outside of meals and snack times?
- Can you provide an example?
  - when do these conversations typically happen?
- 10) How effective do you think nutritional guidelines are?
- Do you think there needs to be more regulation and policies in place?
  - How about within your school?
- 11) What do you think, if any, could be done to better clarify guidelines for nutrition education in early childhood education?

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