

# Staff Food-Related Behaviors and Children's Tastes of Food Groups during Lunch at Child Care in Oklahoma

Katherine Anundson, MS; Susan B. Sisson, PhD, RDN; Michael Anderson, PhD; Diane Horm, PhD; Jill Soto, MS; Leah Hoffman, PhD, RDN

## ARTICLE INFORMATION

### Article history:

Submitted 30 October 2016  
 Accepted 27 July 2017

### Keywords:

Child care  
 Staff  
 Feeding behaviors

2212-2672/Copyright © 2017 by the Academy of Nutrition and Dietetics.  
<http://dx.doi.org/10.1016/j.jand.2017.07.023>

## ABSTRACT

**Background** Young children should consume a variety of nutrient-dense foods to support growth, while limiting added fat and sugar. A majority of children between the ages of 3 and 5 years attend child care in the United States, which makes this environment and the child-care staff influential at meals.

**Objective** The aim was to determine the association between best-practice food-related behaviors and young children's tastes of fruit, vegetable, low-fat dairy, and high-fat/high-sugar foods at child care.

**Design** This was a cross-sectional study.

**Participants** A community-based study with 201 children ages 3 to 5 years from 25 early care and education centers, including 11 tribally affiliated centers and two Head Start programs across Oklahoma. Data collection occurred from fall 2011 to spring 2014.

**Main outcome measures** Classroom observations used the Environmental Policy Assessment Observation tool to measure the staff behaviors and environment. Staff behavior was compared at three different levels: the composite score of staff nutrition behavior, each constituent staff behavior, and staff behaviors grouped into broader feeding behaviors. Tasted food was measured through the Dietary Observation in Child Care method. The children's meals were categorized into the following food groups: fruit, vegetable, low-fat dairy, fried vegetable, fried meat, high-fat meat, and high-fat/high-sugar food.

**Statistical analysis performed** Descriptive statistics were calculated for relevant variables. Relationships between the constituent staff behaviors and food groups that children tasted were compared using multilevel mixed-model analysis.

**Results** The mean number of tasted fruit or vegetable items was higher and the mean number of tasted high-fat/high-sugar food items was lower when staff: 1) determined fullness before plate removal when less than half of food was eaten, 2) ate with the children, 3) and talked about healthy food.

**Conclusions** The utilization of the three staff behaviors and their association with higher mean tastes of nutrient-dense items and lower mean tastes of high-fat/high-sugar food items among exposed children demonstrated support for the use of the best practices in early care and education centers.

J Acad Nutr Diet. 2017; ■-■-■.

CHILDREN BETWEEN THE AGES OF 3 AND 5 YEARS should consistently consume a variety of nutrient-dense foods to support their growth and daily activity.<sup>1</sup> Young children eat fewer calories per day than adults; with their relatively higher nutrient requirements for caloric intake, children should limit foods with added fat and sugar to ensure adequate nutrient intake that supports development.<sup>1</sup> Butte and colleagues<sup>2</sup> and Fox and colleagues<sup>3</sup> reported that American children overconsume sodium, saturated fat, and energy-dense, nutrient-poor foods that promote total caloric overconsumption. Analysis by Kim and colleagues<sup>4</sup> found that young children consume less than half of the daily recommended vegetables; potatoes, including fried forms, were the most commonly

consumed vegetable. However, young children do consume adequate amounts of fruit.<sup>4</sup>

Because 62% of 3- to 5-year-old children in the United States attend early care and education (ECE) centers,<sup>5</sup> it is critical to understand the primary factors in this eating environment that impact children's food intake and behavior development.<sup>6</sup> Young children's food preferences and responsiveness to calories within a meal are malleable and influenced by the home environment and child-care arrangements.<sup>7-9</sup> Feeding practices are composed of individual food-related behaviors (eg, modeling) and have been associated with children's food acceptance.<sup>10</sup> The most recent nutrition-related best-practice behaviors for child-care environments include: work with children to listen to satiety

cues,<sup>11,12</sup> model healthy eating behaviors,<sup>11,13,14</sup> encourage children to “try a bite” that is not initially eaten,<sup>13,14</sup> talk about healthy food in both formal and informal settings,<sup>13,14</sup> refrain from controlling behaviors,<sup>10,11,15</sup> and provide family-style meal service.<sup>11,12</sup> Effective child-care staff behaviors may influence children to taste food from all food groups, which contributes to a well-balanced eating pattern that can be sustained, as recommended by the 2015 Dietary Guidelines for Americans.<sup>1</sup> Research on the influence of nutrition-related behaviors on children’s intake has occurred mostly in the home environment<sup>15–17</sup> and seldom in the ECE environment.<sup>18,19</sup> Only three previous studies have examined the association between nutrition-related behaviors and children’s consumption in the ECE environment.<sup>20–22</sup> Kharofa and colleagues<sup>21</sup> found that when staff served meals family-style and sat with children for most of the meal, the children consumed more vegetables and calories. Gubbels and colleagues<sup>22</sup> reported that children ate more saturated fat and dietary fiber when staff used family-style meal service and when staff sat with children, but a later study found that staff eating with children was only associated with higher consumption of sweet snacks.<sup>20</sup> Given the limited research on the association between nutrition-related behavior and children’s food acceptance, the purpose of the present study was to examine the relationship between child-care staff nutrition-related behaviors during meal times and children’s tastes of a variety of foods from different food groups. The hypothesis was that child-care staff nutrition behavior best practices would be associated with more tasted fruit, vegetable, and low-fat dairy items; and fewer tasted fried vegetable, fried meat, high-fat meat, and high-fat/high-sugar food items during lunch.

## METHODS

### Study Design

This was a cross-sectional study with data collection from fall 2011 to spring 2014. Licensed ECE centers that provided full-time child care to 3- to 5-year-old children were contacted via telephone in a convenience sampling for the opportunity to participate. Twenty-five of the 56 centers that were contacted participated in the study. ECE centers were located in urban and rural settings across all regions in the state of Oklahoma. The study represents 3.3% of all ECE centers in Oklahoma. All centers offered lunch to children in their care as part of licensing requirements. Two of the centers participated in the Head Start program and 11 of the centers were tribally affiliated. A full day of classroom observation occurred twice on days unknown to child-care staff before the observers’ arrival. Child-care staff were teachers and personnel who manage and teach the children assigned to their classroom throughout the day. For purposes of the present study and observation, the staff were not necessarily in the room for the duration of the class day or full meal, but were involved in feeding children during the meal. For example, a floating teacher who relieved the lead teacher or a center director who came into a classroom for a short period of time was included in the observations of staff behaviors. Observation of the children’s lunch meal occurred at least once on the same day as the classroom observation. Parents were notified of the study and were informed that children’s lunch-time classrooms would be observed regardless of

## RESEARCH SNAPSHOT

**Research Question:** The hypothesis was that child-care staff nutrition behavior best practices would be associated with more tasted fruit, vegetable, and low-fat dairy items, and fewer tasted fried-vegetable, fried-meat, high-fat meat, and high-fat/high-sugar food items during lunch at Early Care and Education centers.

**Key Findings:** Three staff best practice behaviors were associated with higher adjusted mean tastes of nutrient-dense items and lower adjusted mean tastes of high-fat/high-sugar food items among children exposed to the behaviors: 1) staff determined fullness before plate removal; 2) staff ate with children; and 3) staff talked about healthy food.

consent unless they contacted the lead investigator requesting that their child not be observed. The study involved 3- to 5-year-old children (n=201) from 35 classrooms in 25 child-care centers. There were 706 eligible children enrolled at these facilities, but 505 were not included because of the limited number of observers for the lunch meal or because the recorded lunch meal did not occur on a day when the class environment was observed. Lunch service among the centers consisted of family-style meal service, trays served with pre-portioned food, or food delivered in bulk and portioned by staff. Of the 201 participating children, 131 had lunch and classroom observation matched on 1 day, while 70 participating children had lunches matched to classroom observation on 2 days. For those children with 2 matched days, 1 day was randomly selected so that 1 day of observation was consistently used per participant. Ethical approval was received from the University of Oklahoma Health Sciences Center Institutional Review Board.

### Staff Behaviors

Staff behaviors can be measured with a variety of metrics. Staff behaviors of conceptual interest included use of internal or external satiety cues with meals, modeling healthy eating behavior, encouraging children to try food not initially eaten, and conversation about healthy food and meal service. These staff behaviors were measured with the Environmental and Policy Assessment and Observation Instrument (EPAO), which is an observation tool designed to measure obesogenic environmental and behavioral factors within an ECE classroom.<sup>23</sup>

The constituent responses from the EPAO staff behavior subscale were classified into the following broader feeding behaviors: internal satiety cues,<sup>24</sup> modeling,<sup>7</sup> and external satiety cues.<sup>24</sup> Staff “determine fullness before plate removal” and “determine hunger before serving seconds” were responses related to internal satiety cues.<sup>24</sup> Staff “sit with children during the meal,” “eat the same food as the children,” and “eat less healthy food in front of children” were responses related to modeling.<sup>7</sup> Finally, staff “use of food to reward behavior” and staff “use of food to control behavior” were responses related to external satiety cues.<sup>24</sup> The responses “talk with children about healthy food,” family-style meal service, and “encourage picky eaters” differ from other

متن کامل مقاله

دریافت فوری ←

**ISI**Articles

مرجع مقالات تخصصی ایران

- ✓ امکان دانلود نسخه تمام متن مقالات انگلیسی
- ✓ امکان دانلود نسخه ترجمه شده مقالات
- ✓ پذیرش سفارش ترجمه تخصصی
- ✓ امکان جستجو در آرشیو جامعی از صدها موضوع و هزاران مقاله
- ✓ امکان دانلود رایگان ۲ صفحه اول هر مقاله
- ✓ امکان پرداخت اینترنتی با کلیه کارت های عضو شتاب
- ✓ دانلود فوری مقاله پس از پرداخت آنلاین
- ✓ پشتیبانی کامل خرید با بهره مندی از سیستم هوشمند رهگیری سفارشات