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Evaluation of Compliance to National Nutrition Policies in Summer Day Camps

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Abstract

Objective—The National Afterschool Association (NAA) standards specify the role of summer day camps (SDCs) in promoting healthy nutrition habits of children attending, identifying foods and beverages to be provided to children, and staff roles in promoting good nutrition habits; however, many SDCs to not provide meals. Currently, national guidelines specifying what children are allowed to bring to such settings does not exist, nor is there a solid understanding of the current landscape surrounding healthy eating within SDCs.

Design—A cross-sectional study design using validated measures with multiple observations was used to determine the types of foods and beverage brought to SDC programs.

Setting—Four large-scale, community-based SDCs participated in the study during summer 2011.

Subjects—The types of foods and beverages brought by children (N=766) and staff (N=87) as well as any instances of staff promoting healthy eating behaviors were examined via direct observation over 27 days. Additionally, the extent to which current foods and beverages at SDCs complied with NAA standards was evaluated.

Results—Less than half of the children brought water, 47% brought non-100% juices, 4% brought soda, 4% brought a vegetable, and 20% brought fruit. Staff foods/beverages modeled similar patterns. Promotion of healthy eating by staff was observed <1% of the time.

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Conclusions—Findings suggest that foods and beverages brought to SDC by children and staff do support nutrition standards and staff do not regularly promote healthy eating habits. To assist, professional development, parent education, and organizational policies are needed.

Keywords

Nutrition Policy; Health Promotion; Summer Day Camp; Child

INTRODUCTION

Over the three months of summer, children in the United States gain more weight than during the 9-month school year and this gain is exacerbated in minority children [(1)]. Children generally consume a higher quality diet from school meals programs, which often follow guidance similar to the Dietary Guidelines for Americans[(2)], than they do when they consume meals from home [(3,4)]. It is during summer months where foods from meal programs are less readily available [(5)] and increased access to foods from home occurs. The unhealthy weight gain observed during summer may be attributed to this increase in availability and consumption of high-calorie foods [(6,7)].

Summer day camps (SDCs), seasonal recreational programs that provide child care and operate for 8–10 weeks during the summer[(8)], are planned and organized by a wide variety of national franchises and community-based organizations. Out-of-school time programs serve a high need population[(8)], with the majority of the approximate 14.3 million children who participate in SDCs annually coming from low-income and minority households[(9)]. Therefore, SDCs provide a great opportunity to improve the eating habits of this vulnerable population during the summer months.

The National Afterschool Association (NAA) released *Standards for Healthy Eating* for out-of-school time programs in April 2011, including afterschool programs and SDCs, to ensure foods and beverages consumed at these programs support lifelong health of children[(10)]. These standards recommend children be provided a fruit or vegetable, water, and beverages without caloric sweeteners daily, and no candy or sugar based foods while attending one of these programs[(10)]. In addition, the standards emphasize the importance of staff nutrition training and corresponding behaviors related to promoting healthy dietary behaviors of children, which include discussing health benefits of foods with children and role modeling healthy eating[(10)]. Since many SDCs do not provide meals or snacks, parents are responsible for packing foods and beverages; therefore, they too play a large role in the nutritional quality of foods. Studies exploring foods and beverages packed by parents in other settings (i.e., preschool, elementary school) indicate that these meals do not meet nutrition standards [(11)]. The standards also recommend that parents be made aware of the healthy eating standards and be given guidelines of appropriate foods that support healthy eating objectives[(10)].

The NAA standards represent an important step towards creating health-promoting environments during the summer, however, given their lack of guidelines specific to foods and beverages brought from home, they cannot be directly applied to SDCs that do not provide meals or snacks. Therefore, the extent to which foods and beverages at SDCs meet

NAA standards currently cannot be assessed. The purpose of this study was to describe 1) the types of foods and beverages brought by children and staff to SDCs, 2) staff behaviors related to promoting nutrition and 3) the extent to which parents are being provided with education materials discussing nutrition standards. The research aim was to unveil the current SDC landscape surrounding healthy eating in an attempt to provide a foundation supporting the need for healthy eating standards applicable to all out-of-school time settings.

EXPERIMENTAL METHODS

Participants

Children attending and staff employed at four large-scale community-based SDCs in South Carolina participated in this cross-sectional study as part of a two year nutrition and physical activity policy-level intervention. SDCs were recruited based on pre-existing relationships. All children (K-5th grade) and staff participating in the SDC program were eligible to be enrolled. Staff and parents were made aware of the nature of the study through the SDCs website as well as informational flyers and staff trainings. Verbal informed consent was obtained from all subjects (parents and staff) and formally recorded. Staff, parents, and children were given the option to opt-out of any data collection. No staff or parent indicated they did not want to participate.

This study was conducted according to the guidelines laid down in the Declaration of Helsinki and all procedures involving human subjects were approved by the [name of the ethics committee removed for blinding].

Study Procedures

Each SDC program began at 7:15am and ended at 6:00pm Monday-Friday and lasted the entire summer (early June – mid August). A typical SDC day began with check-in time, which generally consisted of one to three large mixed-age group games (e.g. free play, field games). At 9am, the official start time for the SDCs, children were grouped by grade level (e.g., 2nd and 3rd graders) and remained in these groups for the remainder of the day. A typical SDC schedule included two snack times and one lunch time scheduled for each group, lasting approximately 30 minutes for snack and 60 minutes for lunch; followed by physical activity time (e.g. sports games, hiking, water-based activities); and enrichment activities (arts and crafts, reading). Across the SDC programs the staff to child ratio was 1:12.

Trained research assistants followed a single group (e.g., 2nd & 3rd) each day over 27 days. Using a stratified sampling procedure, sub-samples of children from each grade level were selected and observed a minimum of two entire days at each SDC; ensuring food and beverage observations of at least 75% of children in any given grade level.

Food and Beverage Measures—The SDCs did not provide food and beverages; therefore, staff and children brought their own foods and beverages for snacks and lunch in a single container (i.e., one lunchbox) each day. Information packets encouraged parents to pack water bottles for their child daily; and water was made available to the children throughout the day. At the beginning of the morning snack time on each observation day

children were asked to open their lunchboxes while a trained research assistant recorded what each child brought to eat and drink for the entire day. Each food and beverage item was recorded on one sheet, not differentiating between snack and lunch items. Children were asked to remain seated until everyone's foods and beverages were recorded during snack time to allow researchers to ask for clarification on any obscured items.

The methods for observation of foods and beverages was based on existing direct observation protocols for the child care centers and elementary schools[11–13] and modified for the SDC setting. Categories of foods and beverages are displayed in Table 1. Portion sizes were not recorded because children could bring any range of portion sizes in plastic bags or storage containers for the given items and quick estimation of portion sizes in differing sizes of containers is unreliable[14]. Because of this, a child's food was recorded as item present. For example, if a child brought two juice boxes, this was recorded as a child bringing a juice box (i.e., present). In addition to the type of food items brought, the total number of children observed was recorded which was used to calculate the percentage of children bringing an item.

Staff food nutritional quality was observed using direct observation over the duration of snack and lunch times during each observation day. Staff nutrition observations were done during each meal time to account for staffing changes throughout the program day. Staff food observations were recorded and classified the same as the child food categories with the addition of coffee and nut categories.

Nutrition Behavior Measures—A systematic observation tool, Systematic Observation of Staff Promoting Activity and Nutrition (SOSPAN), was specifically developed for this study to measure nutrition and physical activity promoting behaviors of staff in out-of-school time programs[15]. Only the nutrition-related behaviors are presented here. The tool was designed with two separate modules. The first was designed to measure nutrition related behaviors during snack and meal times and the second module accounted for all instances where staff were observed eating or drinking outside of snack and meal times. The nutrition behavior observations consisted of 1) “discouragement of good eating behaviors” (i.e., staff speaking to children about their dislike of healthy foods), 2) “promotion of healthy eating” (i.e., speaking to the children about the importance of eating healthy and prompting children to eat healthy foods and 3) modeling of good eating habits by eating foods on a regular basis that meet the body's nutrient requirements outside of meal times. Public health graduate research assistants (N=4) underwent an initial training to establish agreement regarding staff behaviors. Stationed at a predefined location during meal and snack times, research assistants observed staff nutrition behaviors and recorded instances of staff discouraging or promoting good eating behaviors of the children. Staff members were observed over the entire duration of the snack and lunch times.

Parent Education Measures—The dissemination of parent nutrition education materials was measured through direct observation of parent and staff communications and through continual informal discussions with site directors regarding this material.

Inter-Observer Reliability

The inter-observer reliability of the food categories and staff behaviors were estimated using a weighted kappa (κ) and percent agreement. For foods, the κ coefficients ranged from 0.17 (other desserts) to 0.92 (applesauce), for an average κ of 0.70 (median 0.78) suggesting moderate to high reliability on almost all of the items [(12)]. The percent agreement across the food and beverage items ranged from 61% for popcorn to 98% for sports drinks, for an average percent agreement of 91% (median 94%). The κ coefficients for staff eating and drinking outside of snack and lunch times were 1.00 and 0.98, respectively. Inter-rater reliability coefficients could not be obtained for staff nutrition promotion and discouragement behaviors due to the lack of frequency of these observations (see below for details).

Statistical Analysis

Percentages [(food type/total staff or total children)*100] in each food and beverage category were calculated separately for children and staff, using STATA/SE 11.0 (College Station, TX).

RESULTS

Child Observations

Observations of foods and beverages of 773 children were made across 27 days (total food and beverage occasions observed = 46). The average number of children attending the SDCs each day over the 10 weeks was 307, with a range 174 to 534. The majority of children observed were under the age of 12. The number of children observed at each location varied based on weekly enrollment numbers. The average number of children observed in a single group was 10.9, with a range of 5 to 42. Percentages of foods and beverages brought by children are shown in Table 2. For beverages brought, less than have of children were observed with water, 46% with non-100% juices and 14% with sports drinks. Eighty percent of children brought salty snack foods (e.g., chips, crackers), while only 26% and 2% brought fruits and vegetables, respectively. Fruit candy (e.g., fruit gummies, roll ups) (16%) and cookies (24%) were observed most often. Twenty percent of children brought Lunchables™ meals and 48% brought sandwiches (18.3%, white bread with meat; 17.7%, white bread without meat; 5.4% brown bread with meat; 6.8% brown bread without meat).

Staff Observations

Observations of 126 staff foods and beverages and 315 staff behaviors were made across 27 days. The average number of staff observed was 2.2 with a range from 1 to 10. Percentages of foods and beverages brought by staff are shown in Table 2. Water (64%) was the most prevalent beverage observed for staff. Fresh fruit and vegetables were observed 30% and 9% of the time, respectively. Sweeteners (i.e., foods with added sugar), consisting of fruit candy/gummies, candy bars, granola/cereal bars, cereal, cookies, pastries, and other desserts, where observed 40% of the time. Chips were the most prevalent salty snack observed (48%), while dairy products were only observed 5% of the time. Pre-packaged foods including

Lunchables™ and fast food were observed 13% of the time. Meat and non-meat sandwiches (e.g.; peanut butter) were observed 47% of the time for staff.

Staff nutrition behaviors, measured using the SOSPAN tool; indicate that staff promotion of good nutrition habits was observed less than 1% of the total observation time (i.e., duration of meal/snack time). Staff were observed eating or drinking 3.4% of the time outside of meal time. Forty two percent of this observed time staff consumed low nutrient dense foods such as fast food, desserts, pastries, and candies. Soda and sports drinks were observed 38% of the time and beverages in fast food containers were observed 34% of the time.

Finally, the SDC programs did not provide parents with nutrition materials regarding the nutrition standards.

DISCUSSION

Based on our findings, current foods and beverages brought from home to SDCs do not support the healthy eating recommendations set forth by the NAA and staff do not regularly promote healthy nutrition habits. Overall, few children brought fruits, vegetables, and water and over half the children brought items considered as low nutrient-dense foods, such as pre-packaged crackers, popcorn, chips and non 100% fruit juices. Similar results were found for the types of foods staff brought to the SDCs. With over 14 million children attending SDCs, this setting provides an opportunity to promote healthy nutrition habits of children and opportunities to model healthy eating habits by staff. Thus, it appears that these samples of SDCs are not supporting healthy nutrition habits of either staff or the children attending.

Child dietary habits are among the factors attributing to rapid weight gain during summer months [1,6]. As school meals offering more nutrient-dense foods are unavailable during summer months, access to higher calorie foods often increases[1–4]. Our findings, consistent with school studies, reveal that meals brought from home contain few fruits and vegetables and primarily consist of low-nutrient dense foods and beverages [6, 16–18].

Our findings indicated that no information was provided by the SDCs to the parents regarding healthy food and beverage recommendations and options. The ability of SDCs staff to regulate the foods and beverages brought to camp by children may be limited due to anticipated negative parental reaction. To increase the nutritional quality of foods and beverages brought by children to SDCs, programs should address parental perceived barriers to packing healthier foods, such as cost[19] and child food preference[7]. SDCs should increase parent awareness of healthy eating standards and the types of low-cost foods that meet these standards through informational sessions, handouts, guidelines, and advice. Parental education coupled with child nutrition activities has been shown to be effective in changing parental packing behaviors[11]. SDCs could seek partnerships with community entities, such as local grocery stores and nutrition experts, to help provide discounts/ incentives (e.g., coupons) for healthy food and beverage purchases.

Additionally, staff need to be made aware of current standards and be provided with opportunities to learn nutrition promotion skills and tips on packing their own healthy foods and beverages. SDC directors may benefit from the development of nutrition guidelines for

staff that strongly encourages staff to bring foods and beverages that meet existing guidelines and refrain from bringing foods that may promote unhealthy eating behaviors (i.e. sweet foods, potato chips, fast food). Regulations may be set on beverages allowed. For instance, if a staff member brings a beverage other than water it must be in an opaque bottle so that it is not identifiable. To improve upon modeling of good nutrition habits, SDC directors can require that all staff sit and eat foods and beverages with the campers. This is also an opportune time for staff to discuss the health benefits of eating a healthy diet.

Lastly, considering that the length of child attendance at SDCs varies from that of many other out-of-school time programs (i.e.; all day and overnight); the appropriateness of the current NAA standards for this setting should be reassessed. Guidelines on what foods and beverages children and staff are allowed to bring to SDC may be more beneficial in promoting healthy eating in environments where meals and snacks are not provided.

Potential limitations of the study include low inter-observer reliability values for some food and beverage items. Observed food and beverage items were placed into categories previously developed for child care and school settings[11–13]. Staff food and beverage observations were categorized using the same method, thus resulting in the need for additional categories (e.g., coffee and nuts). Categories that were rarely observed potentially resulted in low kappa coefficients; however, overall inter-observer percent agreement among food and beverage items and categories resulted in moderate to high agreement. Another limitation of this study was the inability to observe all foods and beverages for any individual staff member over the program duration. To ensure accurate representation of the foods and beverages brought to camp by staff, any instances of staff eating or drinking outside of designated meal times was recording through systematic observation.

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IMPLICATIONS FOR RESEARCH AND PRACTICE

Based off findings of the current study, children are not bringing foods and beverages to SDC that support the NAA healthy eating standards, raising concerns of their appropriateness for all out-of-school time settings. While nutrition standards have great intention, in order to achieve the goals set forth by the standards, efforts need to target professional development opportunities for staff, as well as working with parents to assist in identifying ways to increase the nutritional content of snacks and lunches packed for their child.

Table 1

Classification categories and examples for child/staff foods and beverages brought to summer day camp, measured through direct observation.

Category	Example
Beverages	
Soda	
Water	
Juice Other (non-100% juice)	Capri Sun™ ,Sunny D™
100% Fruit Juice	
Milk	
Sports Drink	Gatorade™
Energy Drink	Red Bull™
Food	
Dips	Peanut Butter, Ranch Dressing
Fresh Fruits	
Fresh Vegetables	
Dried Fruit	
Fruit Candy	Fruit Gummies
Fruit Cup	Fruit in Syrup
Apple Sauce	
Crackers	
Popcorn	
Chips	
Cereal	
Granola/Cereal Bar	
Cheese	
Yogurt	
Candy Bar	
Cookie	
Pastries	Poptarts^{R}, Muffins
Other Dessert	Pudding, Jello^{R}
Fast Food(from restaurant or home)	Burgers, Fries, Hot Dogs
Lunchables™	
Meat Sandwiches (brown/white bread)	
Nonmeat Sandwiches (brown/white bread)	

Table 2

Percentage of foods and beverages brought by children (N = 773) and staff (N = 126 observations) across 27 days at summer day camp.

Category	Child Percentage	Staff Percentage
Beverages		
Soda/Pop	3.4	10.0
Water	41.9	63.5
Juice 100%	3.4	1.6
Juice other (non-100% juice, e.g. Capri Sun™, juice boxes)	45.9	14.0
Milk	0.7	0.0
Sports D	13.6	15.8
Energy D	0.3	0.0
Fruits and Vegetables		
Vegetable	2.2	8.6
Fruit Fresh	26.1	29.8
Fruit Dried	2.8	5.2
Fruit Cup	9.3	4.2
Apple Sauce	8.1	4.8
Sweeteners		
Fruit Candy	15.6	4.3
Cereal	1.8	3.4
Granola/cereal bar	12.0	3.6
Candy bar	5.9	2.0
Cookie	23.5	10.5
Pastries	15.1	10.3
Other Dessert	9.6	5.9
Salty Foods		
Cracker	24.4	12.4
Popcorn	3.0	4.3
Chips	52.5	48.0
Added “visible” fats		
Dips	3.5	2.4
Dairy		
Cheese	5.3	2.1
Yogurt	5.8	2.6
Pre-packaged Foods		
Fast food	7.2	9.0
Lunchable™	19.5	4.1
Sandwiches		
Brown bread with meat	5.4	0.1
White bread with meat	18.3	17.1
Brown bread non-meat	6.8	5.7

Category	Child Percentage	Staff Percentage
White bread non-meat	17.7	3.0
Meat sandwich (bread type not provided)	--	9.3
Non-meat sandwich (bread type not provided)	--	11.6
Nuts	--	0.6
Coffee	--	0.6
Other (pasta, eggs)	14.5	14.1

Categories may not total 100% since multiple food items were allowed for each meal/snack (i.e. water and juice).