NUTRITION EDUCATION TRAINING NEEDS OF EARLY CHILDHOOD PROGRAM

STAFF SERVING 3-5 YEAR-OLD CHILDREN

By

SATOKO CHIKA

A thesis submitted in partial fulfillment of
the requirements for the degree of

MASTER OF SCIENCE IN HUMAN NUTRITION

WASHINGTON STATE UNIVERSITY
Program in Nutrition and Exercise Physiology

DECEMBER 2009

To the Faculty of Washington State University:

      The members of the Committee appointed to examine the
thesis of SATOKO CHIKA find it satisfactory and recommend that it be accepted.

Jill Armstrong Shultz, Ph.D., Chair

Miriam S. Ballejos, Ph.D., R.D.

Laurel J. Branen, Ph.D., R.D., L.D.

Janice W. Fletcher, Ed.D.

Susan L. Johnson, Ph.D.

Dolores K. Wood, M.S.

ACKNOWLEDGMENT

NUTRITION EDUCATION TRAINING NEEDS OF EARLY CHILDHOOD PROGRAM

STAFF SERVING 3-5 YEAR-OLD CHILDREN

Abstract

by Satoko Chika, M.S.
Washington State University
December 2009

Chair: Jill Armstrong Shultz

Promoting young children's healthy eating and healthy weights involves understanding the

training needs of early childhood program staff (staff) and the partnership between staff and

parents in care of the child. An assessment was conducted with staff to identify their interests

and needs related to feeding, nutrition, and body weight for young children. Staff's reported

attitudes related to communicating with parents about these topics were also assessed. A mail

survey was conducted with early childhood teachers (n = 271) working with 3 to 5 year old

children at centers. Extensive preliminary data from focus group studies with childcare staff and

parents guided questionnaire design. Results showed staff's strong interest in training for

nutrition content as well as ways to communicate with parents, notably among those with more

years of work experience. Training topics most frequently reported were physical activity and

active play for young children, healthy eating and nutrition for young children, and handling

picky eating. Respondents overall recognized the importance of responding to early childhood

overweight, but need support and guidelines for doing so. A majority of respondents (76%) at

least somewhat agreed that the program should communicate with parents if childcare staff has

concerns that a child is overweight or obese. However, 52% reported they have never talked with

parents about a child being overweight and 20% reported feeling not at all comfortable with the

idea of talking to parents about it. When assessing respondent's feelings about approaching

parents to talk about their child being overweight, there was reported agreement that respondents would feel "worried that parents will take offense" (82%), "hesitant when parents have different cultural beliefs" (79%), and "worried that parents will deny there's a problem" (78%). Respondents who talked more frequently with parents about a child being overweight were significantly more likely to express positive attitudes toward communicating with parents about the issue. There is a need to provide training for staff that utilizes updates and flexible formats to meet both individual and program needs, including guidelines for communicating with parents about issues related to children's being overweight.

TABLE OF CONTENTS

APPENDIX

LIST OF TABLES

LITERATURE REVIEW

Childhood Obesity in the U.S.

Childhood obesity is a significant public health issue in the United States (U.S.). Data from the Second National Health and Nutrition Examination Survey (NHANES II) indicates that 5% of children aged 2 to 5 years were categorized as overweight in 1976-80 (Centers for Disease Control and Prevention (CDC), 1976-1980), which increased to 13.9% in 2003-04 (CDC, 2003-2004). Outside of the home, an early childhood program site represents an important setting to address the child obesity problem in the U.S., and early childhood staff are key people to address the issue.

Definition of Childhood Overweight and Obesity

Children are classified for body weight status by Body Mass Index (BMI) using the same formula as with adults, although BMI is interpreted differently for children (Barlow & the Expert Committee, 2007). A BMI percentile for children is derived by mapping an estimated BMI-for-age growth chart for boys or girls, with a BMI percentile greater or equal to the 95th percentile classified as obese. A BMI from the 85th to less than the 95th percentile represents overweight (Barlow & the Expert Committee, 2007).

Childhood Overweight Related to Health Conditions

Childhood overweight can impact children's health, ranging from immediate to long-term consequences (Must & Strauss, 1999). Health-related issues in childhood associated with childhood overweight include orthopedic problems (Dietz, 1998), asthma (Luder, Melnik, & DiMaio, 1998; Rodríguez, Winkleby, Ahn, Sundquist, & Kraemer, 2002), sleep-disordered breathing (Mallory, Fiser, & Jackson, 1989; Marcus et al., 1996), and psychosocial risks such as social discrimination (Caskey & Felker, 1971; Dietz, 1998) or low self-esteem (Hesketh, Wake,

1

& Waters, 2004). In addition, childhood overweight can accompany higher risk for hypertension, high cholesterol levels, insulin resistance, and abnormal glucose tolerance, which are associated with cardiovascular disease and Type 2 diabetes in adulthood (CDC, 2007b; Dietz, 1998; Fagot-Campagna, Narayan, & Imperatore, 2001; Must & Strauss, 1999). Being overweight is a risk factor for type 2 diabetes in childhood; the American Diabetes Association reports that at the time of diagnosis of children with Type 2 diabetes, 85% are overweight or obese (American Diabetes Association, 2000).

Overweight children have a greater likelihood of being overweight or obese as adults (American Heart Association, n.d.; Serdula et al., 1993); as such, overweight children are also at risk at a later age for the health-related conditions resulting from adult overweight or obesity. According to the Centers for Disease Control and Prevention and the National Heart Lung and Blood Institute, adults who are overweight or obese have higher risks for hypertension, osteoarthritis, dyslipidemia (lipid disorders), type 2 diabetes, coronary heart disease, stroke, gallbladder disease, sleep apnea and respiratory problems, as well as certain cancers (endometrial, breast, prostate, and colon) (CDC, 2007a; National Heart Lung and Blood Institute, n.d.).

Potential Influences on Childhood Obesity

Overweight results from an energy imbalance—energy intake greater than energy expenditure—and for children this is associated with multiple factors. Genetic factors contribute to energy imbalance (Bell, Walley, & Froguel, 2005; CDC, 2007c) but rarely act alone. For most children, factors contributing to higher energy consumption include excess caloric intake (Nielsen, Siega-Riz, & Popkin, 2002), increases in intakes of energy dense food (Committee on Prevention of Obesity in Children and Youth, 2005) and sweet beverages (Welsh, 2005), and large portion sizes of food (Committee on Prevention of Obesity in Children and Youth, 2005).

Less energy expenditure is associated with an increase in sedentary activities such as watching television as well as decreased time spent in physical activity (Jago, Baranowski, Baranowski, Thompson, & Greaves, 2005). Environmental influences—community-based, family or household, and childcare—also potentially influence energy imbalance (CDC, 2007c; Committee on Prevention of Obesity in Children and Youth, 2005). Factors potentially influencing early childhood obesity will be reviewed further.

Community-Based Influences on Young Children's Food Intakes.

In the community, the availability of healthy food may promote healthy eating for families (Story, Kaphingst, Robinson-O'Brien, & Glanz, 2008). However, healthy food may not readily be available for some households because of its limited accessibility, including high price. According to a study in San Diego (Sallis, Nader, Rupp, Atkins, & Wilson, 1986), supermarkets offered more heart-healthy foods (i.e., low-sodium and low-fat foods) than a neighborhood grocery, convenience store, or health food store. Heart-healthy foods included food items such as low fat milk, low sodium cheese, egg substitutes, and Canadian bacon. In addition, supermarkets offer foods at a lower cost compared to smaller food stores (Kaufman & Lutz, 1997). A study conducted in Mississippi, North Carolina, Maryland, and Minnesota showed that a larger number of supermarkets are available in higher-income neighborhoods than in lower-income neighborhoods for these four states (Morland, Wing, Diez Roux, & Poole, 2002). In addition, predominately white neighborhoods have four times as many supermarkets as predominately black neighborhoods in these states (Morland et al., 2002). Therefore, a lack of access to supermarkets may be a barrier for families in purchasing healthy food at affordable prices.

Media Influence on Young Children's Food Intakes.

According to the Institute of Medicine, television advertising can influence children's preferences (choices of brand or type of product) and short-term consumption of food and beverages for those aged 2 to 5 years (Institute of Medicine, 2005). For example, research was conducted on the influence of advertisements on young children's food preferences (Borzekowski & Robinson, 2001). In this experiment, 46 children aged 2 to 6 years were shown video-taped commercials for products that included breakfast cereal, candy, doughnuts, fast-food chicken, juice, peanut butter, sandwich bread, snack cakes, and toys. After the children viewed the videotape, they were asked to select between two products, one that was shown on the videotape, and a similar product that was not. The advertised products were more likely to be chosen by children who viewed the commercials on a videotape than by children not viewing the commercials (Borzekowski & Robinson, 2001). The child's age, race or ethnicity, and socioeconomic status may mediate the effects of television advertising on preferences or short-term consumption; however, more research is needed to delineate these effects (Institute of Medicine, 2005).

Parental and Family Influences on Young Children's Food Intakes.

Parents and family also influence their children's food intake and weight status. In research investigating the influence of parental behaviors, greater parental pressure was associated with lower fruit and vegetable consumption among five-year-old daughters (Fisher, Mitchell, Smiciklas-Wright, & Birch, 2002). Greater parental pressure was evidenced by a greater degree of agreement with the following statements: (a) My child should always eat all of the food on her plate, (b) I have to be especially careful to make sure my child eats enough, (c) If my child says "I'm not hungry", I try to get her to eat anyway, and (d) If I did not guide or

regulate my child's eating, she would eat much less than she should (Birch et al., 2001; Fisher et al., 2002). In this study, the frequency of parents' fruit and vegetable consumption was positively associated with that of their 5 year old daughters. Findings imply that parents can act as role models for eating, and that frequent exposure of food may influence children's food intake (Fisher et al.). Other family members may also have an impact on what children eat. Food preferences of children 28 to 36 months, inferred from food selections from among 196 food items, corresponded positively and significantly with those of other family members, including the mother, father, and older sibling (Skinner et al., 1998). In addition, young children who experienced fewer family meals when they were in kindergarten and first grade showed a higher risk of being overweight in 3rd grade (Gable, Chang, & Krull, 2007). Educational efforts with parents can help them positively influence their young children. This may also have ripple effects for the rest of the family.

Food Intake Measures of Children as Potential Obesity Risk Factors.

Fast-food consumption can influence energy intake because of its greater likelihood of high calorie and high fat content. Survey data from the 1994-1996 Continuing Survey of Food Intakes by Individuals (CSFII) and the 1998 CSFII revealed that on average, 24.6% of children aged 4-8 years consumed fast food daily (Bowman, Gortmaker, Ebbeling, Pereira, & Ludwig, 2004). Children consuming fast food on the survey day consumed more total fat ($p < 0.05$), added sugars ($p < 0.05$), and sugar-sweetened beverages ($p < 0.05$) than did those not consuming fast food on the survey day. Children who consumed fast food also consumed fewer fruits and non-starchy vegetables ($p < 0.05$) and less dietary fiber ($p < 0.05$). Results indicate that fast food consumption may be an appropriate indicator for research related to healthy eating for young children.

Young children's consumption of sugar-sweetened beverages may affect their weight gain. In a retrospective cohort study of the relationship between overweight and consumption of sweet drinks among 10,904 preschool children (Welsh et al., 2005), consumption of sugar-sweetened beverages was positively associated with overweight among young children 2 and 3 years old at baseline, as well as among 3 and 4 years old at the 1-year follow-up. Specifically, children at-risk for overweight at baseline who consumed 1 to < 2 drinks/day, 2 to < 3 drinks/day, or 3 or more drinks/day were 2.0, 2.0, and 1.8 times more likely to be overweight, respectively, at the 1-year follow-up than those who consumed < 1 drink/day. Also, children who were overweight at baseline and consumed sugar-sweetened beverages were more likely to stay overweight at the 1-year follow-up. Uncontrolled variables in this study include parents' BMI and children's TV watching. These factors may explain the non-linear adjusted odds ratios as the average number of daily sugar-sweetened beverage consumption increased. Another study showed that per-capita kilocalories from 100% fruit juice and sugar-sweetened beverages among children (2-5 years old) have increased over the last two decades (Wang, Bleich, & Gortmaker, 2008). Sweetened beverages may represent a specific class of foods to target in obesity prevention programs (Welsh et al., 2005). In addition to controlling consumption from a specific food item such as fast-food or sweetened beverages, well-balanced diets play a crucial part in supporting children's healthy eating.

Large portion sizes served to and consumed by preschool children may lead to increases in their energy intake, resulting in an energy imbalance and eventually overweight and obesity. In an energy intake study of 53 children aged 5 to 6 with diverse ethnic backgrounds (Fisher, Liu, Birch, & Rolls, 2007), a macaroni and cheese entrée served at dinner was modified by portion size and energy density. Results showed that energy intake from the entrée as well as energy

6

intake from the entire meal (entrée and other food items) increased on average by 76% ($p < 0.0001$) and 34% ($p < 0.0001$), respectively, when the doubled portion size of the higher energy density entrée was offered. In another study with 30 preschool children in full-time childcare facilities (Fisher, Rolls, & Birch, 2003), children were served a macaroni and cheese entrée for lunch that was tested using either reference size portion, a doubled size portion, or a self-served portion size during a 12-week observation period of mealtimes. When children were served a doubled portion size of the entrée, they increased their average consumption of the entrée ($p < 0.001$) and total energy intake for the meal ($p < 0.01$), as well as their average bite size ($p < 0.05$). Showing similar results, researchers working with non-Hispanic white children aged 2 to 9 ($n = 75$) (Fisher, 2007), observed the children at the dinner meal to compare food consumption and total energy intake under three serving conditions: a fixed (reference) portion size of the entrée, a doubled portion size, or self-served portion size. Other food items in the meal were not modified throughout the test period. When the portion size of the entrée was doubled, children on average consumed 29% ($p < 0.001$) more of the entrée and had 13% ($p < 0.01$) higher total energy intake for the meal compared to the condition when the reference portion size entrée was served. Energy intake among children over a 24-hour period also increased with the larger portion meals. In a study with 59 Hispanic and African American children aged 5 from low-income families (Fisher, Arreola, Birch, & Rolls, 2007), children were served three entrées and an afternoon snack in reference or doubled portion sizes—the portion size of several food items were adjusted—with energy intake noted during a 24-hour observation period. Results showed that children consumed 12% ($p < 0.001$) more total energy when served the doubled portion size compared to the reference condition. In summary, larger portion entrees, meals, and snacks may contribute to increases in total energy intake of the entrée and the meal

7

itself as well as energy intake over a 24-hour period. Eating environments where children are repeatedly exposed to larger portion sizes can be an obesogenic factor.

Childcare in the U.S.

Childcare centers represent potential environments to encourage healthy eating and physical activity for young children. However, there is evidence that children's nutrient intakes at childcare centers may be inadequate. According to a study that evaluated food consumption of children both inside and outside of childcare centers, more than one-half of children did not meet the minimum recommended consumption of energy, niacin, iron, and zinc at childcare centers (Briley, Jastrow, Vickers, & Roberts-Gray, 1999). In addition, children did not consume the recommended servings of vegetables or foods from the grain group (bread, cereal, pasta, and rice) from childcare facilities. Despite the more standardized setting of food and nutrition found in childcare sites compared to other eating environments for children, there is a need to understand factors influencing children's intakes while they are in childcare as a significant influence on their diet-related health.

Examination of childcare issues, particularly those related to staff, is key to understanding the factors affecting children's food consumption in childcare, influencing early childhood overweight, and identifying possible preventive measures for early childhood obesity. Center-based care is the most prevalent childcare arrangement in the U.S. for children 5 years and under. Data from the 2005 National Household Education Survey (NHES) estimated that the majority (60%) of children aged 5 or younger receive some type of care from non-parents at least once a week; 60% of these receive care from center-based care providers and spend 24.8 hours per week on average in this setting (Iruka & Carver, 2006). According to the NHES, day care centers, Head Start programs, preschools, pre-kindergartens, and other programs for early

childhood care are referred to as center-based arrangements (Iruka & Carver, 2006). Since many young children in the U.S. are spending significant time in a childcare center, staff can play a supportive role in helping develop young children's skills and have a significant impact on their well-being (American Dietetic Association (ADA), 2005).

The majority of states have programs, supervised through a collaboration between state and private organizations, to support the practice of childcare professionals and to provide opportunities for improving childcare providers' childcare practices to specific quality standards. Some of these programs also help with childcare provider career skills and advancement. Selected programs offer training that includes early literacy for children, medical treatment, safety issues, and socializing with coworkers. Examples include the Idaho State Training and Registry System (STARS) (IdahoSTARS, n.d.) and the Washington STARS (Washington STARS, n.d.). If a center participates in the U.S. Department of Agriculture (USDA) Child and Adult Care Food Program (CACFP), staff must receive training on nutrition, feeding children, menu planning, food safety, administration, or other topics at least once a year (J. Fletcher, personal communication, July 11, 2008; USDA, n.d.). The definition of staff and the required number of staff from a center are determined by each state agency. Otherwise, childcare providers are not required to receive training in nutrition or feeding children (J. Fletcher, personal communication, July 11, 2008).

Healthy Eating Guidelines for Young Children in Early Childhood Programs.

Each state has individual childcare licensing laws (National Association of Child Care Resource and Referral Agencies, n.d.) that include nutrition. In addition, guidelines for feeding children at childcare centers are issued by six major agencies or organizations. The six agencies or organizations are the USDA, the National Association for the Education of Young Children

(NAEYC), the American Academy of Pediatrics (AAP)/American Public Health Association (APHA)/National Resource Center for Health and Safety in Child Care and Early Education (NRC) (AAP, APHA, and NRC jointly developed their guidelines), and the American Dietetic Association (ADA). The guidelines by the USDA are for participants in the CACFP. For this review, their guidelines are grouped into three topics: (a) adult-child relationships at mealtimes, (b) supporting children's self-regulation with respect to food, (c) mealtimes environments for supporting children's eating, and (d) mealtime as curriculum.

Adult-Child Relationships at Mealtimes.

Certain child feeding guidelines overlap among the aforementioned agencies and represent a relationship that is desired between the child and the childcare staff, as follows: Childcare staff are recommended to sit with the children to eat during mealtimes (ADA, NAEYC, and AAP/APHA/NRC) (AAP, APHA, & NRC, 2002; ADA, 1999; ADA, 2005; NAEYC, n.d.b). The AAP/APHA/NRC and ADA advise staff to be role models at mealtimes (AAP et al., 2002; ADA, 1999; ADA, 2005).

Supporting Children's Self-Regulation with Respect to Food.

A number of recommendations that help to shape children's self-regulation with food begin with family style meal service (ADA, NAEYC, AAP/APHA/NRC, and USDA) (AAP et al., 2002; ADA, 1999; ADA, 2005; NAEYC, n.d.b; USDA, 2008). Also, children should be offered age-appropriate portion sizes (ADA, NAEYC, and AAP/APHA/NRC) (AAP et al.; ADA, 1999; NAEYC, n.d.c). The AAP/APHA/NRC and ADA advise that childcare staff do not use food as a reward (AAP et al.; ADA, 1999; ADA, 2005), and do not force children to eat or to finish the foods offered (AAP et al.; ADA, 1999). The USDA and AAP/APHA/NRC encourage offering another serving upon the child's request (AAP et al.; USDA, 2008).

10

Mealtimes Environments for Supporting Children's Eating.

There are guidelines supporting children's eating during mealtimes that are child-centered. The AAP/APHA/NRC and ADA advise childcare staff to allow sufficient time for children to eat their meal and to maintain positive environment during mealtimes (AAP et al., 2002; ADA, 1999; ADA, 2005). Also, these agencies suggest using age-appropriate equipment and utensils for children, including chairs, tables, forks, and spoons (AAP et al.; ADA, 1999; ADA, 2005).

Mealtime as Curriculum.

Mealtime is an integral part of the children's curriculum for the NAEYC and ADA (ADA, 1999; ADA, 2005; NAEYC, n.d.a). The ADA recommends that children in childcare centers should learn about food related topics such as how nutrition affects health and that children's activities aimed at learning nutrition should be incorporated into food services at a childcare center (ADA, 1999; ADA, 2005). Notably, an accreditation criterion of the NAEYC is that learning opportunities for nutrition should be integrated within the curriculum at a childcare center (NAEYC, n.d.a). The nutrition education could include identifying where food comes from and what constitutes healthy foods (NAEYC, n.d.a). The ADA recommends that parents become involved as much as possible in developing nutrition education at centers (ADA, 1999; ADA, 2005). An example of parent nutrition education might be the parent taking home a menu from a childcare center to support their child's healthy eating (ADA, 1999; ADA, 2005).

Role of Early Childhood Program Staff in Supporting Children's Eating

Childcare staff play important roles in supporting children's healthy eating. Nahikian-Nelms (1997) assessed the knowledge and perceptions of caregivers (n = 113) related to nutrition and observed their actual practices during mealtimes at a childcare program.

Caregivers reported that they play important roles in influencing children's food acceptance and forming children's healthy eating habits when they sit and eat with children at mealtimes. However, many caregivers acted in contrast to their reported perceptions. For example, although the majority (86%) of caregivers agreed that they influence children's eating behaviors by eating with children, and 95% agreed that caregivers are responsible for sitting with children and being positive role models during mealtimes, fewer (69%) caregivers were observed actually sitting with the children during mealtimes. Among these, 53% were observed eating the same food with them. This study also showed that caregivers may lack an adequate knowledge of nutrition; only 13% could define the Recommended Dietary Allowances correctly, and the group averaged 10.9 out of 20 points on a nutrition knowledge test. In addition, findings showed that the caregivers with greater nutrition knowledge were more likely to demonstrate optimal behaviors at mealtimes ($p < 0.05$), including sitting with children at mealtimes and consuming the same foods that children eat. Notably, results suggest that many caregivers have difficulty incorporating nutrition into curriculum and mealtimes. While the majority agreed that mealtimes are opportunities to educate children about nutrition (83%) and that mealtime could be a part of teaching curriculum (86%), only 50% of caregivers were observed talking about nutrition at mealtimes (Nahikian-Nelms, 1997). Despite supportive attitudes toward their roles at mealtimes, caregivers may lack appropriate training to carry out mealtime behaviors that encourage children's healthy eating.

There is evidence that having the teacher sit with the children and eat the same food as children during meals has a positive effect on healthy eating for young children. A study reported that the number of children's bites of new food was higher when teachers ate the same food with the children and said positive words ("delicious" or "love this food") than when they simply sat

with the children without eating the same food (Hendy & Raudenbush, 2000). Staff are role models for preschool children at mealtimes by showing what to eat, how to eat with utensils, and appropriate behavior at the table. In addition, staff play significant roles in providing food-related information, such as the name of the food. Moreover, staff can discuss food in a non-judgmental way that engages children's interest and encourages them to talk about food: for example, by describing objectively how a food looks or feels in the mouth (Fletcher & Branen, 1994). Having staff sit with the children and eat with them are noted as standards with the AAP, APHA, and NRC (2002). Part of the rationale for these standards is to reduce children's behavioral problems during mealtimes such as fighting or putting too much food into their mouths (AAP et al., 2002). The AAP, APHA, and NRC hold these recommended practices as evidence-based.

Staff and Parent Interactions

Various components shape the relationships between parents and childcare providers. Elicker, Noppe, Noppe, and Fortner-Wood (1997) introduced eight domains to describe the quality of a parent-caregiver relationship: trust/confidence, open communication, respect/acceptance, caring, competence/knowledge, partnership/collaboration, shared values, and affiliation/liking. In their study of caregivers and parents from center-based and family childcare programs, both groups reported that confidence in each other is key for their relationship. However, the components that build confidence in each other appeared to be different for each: Caregivers stressed parents' open communication about a child, agreement with the parent on the child's care, and parents' knowledge and skills in childrearing. By contrast, parents' confidence in caregivers appeared to be based on the respect they feel towards caregivers, their trust in caregivers, the caregivers' parenting skills, and the caregivers' knowledge related to child

13

development and childcare (Elicker et al., 1997). For childcare providers, these latter components expressed by parents could be areas to reinforce in order to enhance relationships with parents.

The relationship between parents and childcare providers influences children's development and supports caring of children. However, a qualitative study with mothers and teachers in a childcare center revealed that mothers and teachers do not always collaborate as a team (McGrath, 2007). During a one-year study, mothers and teachers were observed at the time of drop-off and pick-up of the child. Additional data collection included interviewing the participants and observing meetings and workshops for parents or staff. Findings showed that teacher's communication with parents is critical to increase the trust of parents: Parents felt that they have a partnership with teachers when frequent communication related to their children occurred. To support children's well-being and to form a partnership with parents, there is a need to offer teachers opportunities to improve their communication skills with parents, especially skills specific to an area of children's development.

Preliminary Data from Childcare Staff Related to Supporting Healthy Eating for Young Children in Early Childhood Program Settings

Preliminary and qualitative data used to design this thesis research was collected as part of a project funded by the USDA. The purpose of the overall project was to develop a web-based training program for trainers to train early childhood program staff in healthy eating and physical activity for young children as well as strategies to prevent early childhood obesity. Training components include ways to support communication between childcare staff and parents to enhance this learning and its applications, and to prevent early childhood obesity.

14

The preliminary data from childcare providers revealed issues and concerns related to supporting children's healthy eating and communicating with parents about child feeding and obesity prevention (Wood, Shultz, Johnson, Branen, Fletcher, & Ramsay, 2009). Focus group data were collected from seven focus groups with childcare providers (n = 39) from childcare centers, family childcare programs, and Head Start or Early Start center in multiple western states. The findings from focus groups were categorized into 36 content category themes. The themes selected for further investigation in this research are summarized as follows: (a) healthy eating, (b) parent interactions, and (c) obesity issues.

Healthy Eating.

The theme, "Center- or site-based influences on young children eating healthfully," included childcare providers' beliefs that they support healthy eating at the site by modeling good eating and creating an appropriate meal environment for children. The "Role of provider him/herself in supporting young children to eat healthfully" represented childcare providers' ideas about encouraging children to eat enough food and modeling eating to children to promote food acceptance. When childcare providers expressed "Perceptions about family influences on young children eating unhealthily," they talked about factors such as parents not having time to prepare healthy meals, not having enough nutrition knowledge, or not providing a variety of foods. Childcare providers reported "Changes at the center or site to promote children eating healthfully," that included making connections for nutrition education at mealtimes that link the teacher to the child, the teacher to the parent, and the teacher to the child and then to the parent. When expressing their perceptions of "Parents' concerns about children's healthy eating or nutrition," childcare providers listed parents' worries about picky eating, health concerns, and the child eating enough. They reported that "Parents' comments about food and/or food service

at the center" included parents asking for recipes and liking how the center gets children to eat, and how the center serves nutritious meals. The ways childcare providers and parents could support children eating healthfully both at home and at the center was also discussed in the focus groups. To support healthy eating at home, participants suggested offering recipes, newsletters, and classes, as well as interacting personally with the parent to relate to or mentor the parent with healthful eating for children. At the center, participants suggested offering a parent day, meeting with parents, and offering menus and recipes.

Parent Interactions.

Childcare provider comments about "Ways the provider responds to parents' questions or expressed concerns about nutrition and/or healthy eating" included feeling barriers to approaching parents about nutrition education and healthy eating because it crosses a line of privacy and parents' choice in how they raise their children. Childcare providers spoke about the need to be sensitive to both parental pride and parents' own concerns about their child's eating. Childcare providers stated that it was important to accommodate parents' limitations in time and energy relative to receiving nutrition education.

Obesity Issues.

Focus group participants were asked about their attitudes and potential actions related to obesity concerns with young children. "Attitudes of providers toward interacting with parents about their child's body weight," included participants feeling uncomfortable or embarrassed, as overweight was seen as a sensitive issue. Some anticipated the parents would be defensive. Others expressed their own limitations, including feeling unequipped or untrained to speak with parents about a child's overweight, and that it would be a difficult kind of communication. The theme, "Challenges with communication between provider and parent(s) on the topic of child's

body weight" represented perceptions that parents can be unresponsive or take it personally when someone feels their child is overweight. Also, some participants reported that they are not experts concerning children's body weight. Childcare providers' ideas about "Ways providers and parents can help prevent overweight and obesity in young children" included sending out information to all parents, as well as newsletters or web site information.

For this thesis, the preliminary focus group data summarized above were used to design a survey questionnaire quantifying key issues with early childhood staff training in the areas of healthy eating, interactions with parents, and obesity prevention. Findings will be used as evidence-based input into web training. The objectives of this thesis research therefore were:

- To identify nutrition training needs of staff in supporting healthy eating for young children at early childhood program sites;

- To identify nutrition training needs of staff in educating parents about nutrition and healthy eating for young children;

- To assess staff perceptions about early childhood overweight and obesity in early childhood program settings.

MANUSCRIPT

Running head: NUTRITION EDUCATION TRAINING NEEDS

Title: Nutrition Education Training Needs of Early Childhood Program Staff Serving 3-5

Year-Old Children

Journal: Journal of Early Childhood Teacher Education

Abstract:

A mail survey was conducted with 271 early childhood program staff to identify their training

interests, needs, and attitudes related to feeding, nutrition, and weight for young children,

including communicating with parents about these topics. Most (76%) respondents at least

somewhat agreed the program should communicate with parents if childcare staff has concerns

that a child is overweight. Related to staff themselves talking to parents about their child being

overweight, 52% indicated they have never talked with parents and 20% reported feeling not at

all comfortable with the idea of talking to parents. Training should include communication

guidelines for use with parents related to their child being overweight and continuous updates for

topics of feeding and nutrition for young children.

INTRODUCTION

Early childhood overweight is a significant public health issue in the United States

(U.S.). Data from the Second National Health and Nutrition Examination Survey (NHANES II)

indicates that 5% of children aged 2 to 5 years were categorized as overweight in 1976-80

(Centers for Disease Control and Prevention (CDC), 1976-1980), increasing to 13.9% for

2003-04 (CDC, 2003-2004). Outside of the home, an early childhood program site represents an

important setting to address the child obesity problem in the U.S., and the staff in such programs

can be key people to address the issue.

Center-based care is the most prevalent childcare arrangement in the U.S. for children 5

years and under. Data from the 2005 National Household Education Survey (NHES) estimated

that the majority (60%) of children aged 5 or younger received some type of care from

non-parents at least once a week; 60% of these received care from center-based care providers

and spent 24.8 hours per week on average in this setting (Iruka & Carver, 2006). According to

the NHES, day care centers, Head Start programs, preschools, pre-kindergartens, and other

programs for early childhood care are referred to as center-based arrangements (Iruka & Carver,

2006). Since many young children in the U.S. are spending significant time in an early childhood

program, staff can play a supportive role in helping develop young children's skills and have a

significant impact on their well-being (American Dietetic Association, 2005).

Early childhood programs include environments that should encourage healthy eating

and physical activity for young children. However, there is evidence that children have

inadequate intakes of certain nutrients at childcare centers. According to a study that evaluated

food consumption of children both inside and outside of childcare centers, more than one-half of

children did not meet the minimum recommended consumption of energy, niacin, iron, and zinc

while at childcare centers (Briley, Jastrow, Vickers, & Roberts-Gray, 1999). In addition, over a 3-day observation, children on average did not consume the recommended servings of vegetables or foods from the grain group (bread, cereal, pasta, and rice) while at childcare facilities (Briley et al., 1999). There is a need to understand factors influencing children's intakes while they are in early childhood programs as a significant influence on their diet-related health.

Staff in early childhood programs have specific training needs to support children's healthy eating. Nahikian-Nelms (1997) assessed the knowledge and perceptions of caregivers (n = 113) related to nutrition and observed their actual practices during mealtimes at a childcare program. Notably, many caregivers acted in contrast to their reported perceptions. For example, although the majority (86%) of respondents agreed that they influence children's eating behaviors by eating with children, and 95% agreed that caregivers are responsible for sitting with children and being positive role models during mealtimes, fewer (69%) caregivers were observed actually sitting with the children during mealtimes. Among these, 53% were observed eating the same food as the children. This study also showed that caregivers may lack an adequate knowledge of nutrition; only 13% could define the Recommended Dietary Allowances correctly, and the group averaged 10.9 out of 20 points on a nutrition knowledge test. In addition, the caregivers with greater nutrition knowledge were more likely to demonstrate optimal behaviors at mealtimes ($p < 0.05$), including sitting with children at mealtimes and consuming the same foods that the children eat. Results also suggest that many caregivers have difficulty incorporating nutrition into curriculum and mealtimes. While the majority agreed that mealtimes are opportunities to educate children about nutrition (83%) and that mealtime could be a part of teaching curriculum (86%), only 50% of caregivers were observed talking about nutrition at mealtimes (Nahikian-Nelms, 1997). Despite supportive attitudes toward their roles at mealtimes,

staff in early childhood programs may need additional training to carry out mealtime behaviors that encourage children's healthy eating.

Interactions between parents and program staff are important in supporting children who attend early childhood programs. However, a qualitative study with mothers and teachers in a childcare center revealed that mothers and teachers do not always collaborate as a team. During a one-year study (McGrath, 2007), mothers and teachers were observed at the time of drop-off and pick-up of the child. Additional data collection included interviewing the participants and observing meetings and workshops for parents or staff. Findings showed that the teacher's communication with parents is critical to increase the trust of parents: Parents felt that they have a partnership with teachers when frequent communication related to their children occurred. Other research has shown that the confidence of parents and caregivers in each other is a key factor for their relationship (Elicker, Noppe, Noppe, & Fortner-Wood, 1997). The study reported that parents' confidence in caregivers appeared to be based on the respect they feel towards caregivers, their trust in caregivers, and the parents' perceptions of the caregivers' parenting skills and knowledge related to child development and childcare. For early childhood program staff, these components expressed by parents could be areas to reinforce to enhance their relationships with parents.

To support children's healthy eating through a partnership between early childhood program staff and parents, there is a need to offer staff opportunities to improve their communication skills with parents relative to children's nutrition and eating. Training needs of staff for conducting nutrition education with parents have not yet been identified, including ways to support staff communication with parents about healthy eating for young children. As healthy eating is a major avenue for obesity prevention, it is also important to assess staff views about

their role in addressing overweight in the early childhood program setting, particularly in relation to communicating with parents. The objectives of this present research therefore were (a) to identify nutrition training needs of staff in supporting healthy eating for young children at early childhood program sites; (b) to identify nutrition training needs of staff in educating parents about nutrition and healthy eating for young children; and (c) to assess staff perceptions about early childhood overweight and obesity in early childhood program settings.

METHODS

A mail survey questionnaire for teachers working with preschool children at early childhood centers was developed based on preliminary and qualitative focus group data from a previous study (Wood, Shultz, Johnson, Branen, Fletcher, & Ramsay, 2009) and a literature search. The Institutional Review Board of Washington State University (WSU) determined this study to be exempt research.

Sampling Frame

A national purposive sample was purchased from the National Association for the Education of Young Children (NAEYC) (Marketing General Inc.). Selection criteria used with the list were as follows: (a) teacher position; (b) working with preschool children (3 to 5 years of age); and (c) center-based location of employment. Center-based location might include a Head Start program, a preschool program, or a childcare program. From a list updated six months prior to the study, 4% of the members were male and 84% were female, with 12% not described (Marketing General Inc.). A sample of 5,000 was obtained as a minimum purchase; for the purposes of this study, a random sample of n = 1,000 was drawn from the purchased list. With an anticipated response rate of 40% based on similar research (Sigman-Grant, Christiansen, Branen, Fletcher, & Johnson, 2008), a final sample size of approximately 400 was expected.

Questionnaire Development

A 31-item questionnaire (Appendix A) was designed to collect the following categories of variables: nutrition education practices of both the staff and the center (3 items), topics of interest related to nutrition training (3 items), interest in potential use of nutrition materials with parents (3 items), attitudes toward communicating with parents about eating (2 items), questions related to children's overweight (5 items), personal characteristics (11 items), and selected center profile (4 items).

For current nutrition education practices, respondents reported if they have used nutrition resources for their current positions from a list that included books or MyPyramid materials. Another question assessed resources on nutrition or feeding children that the respondent's program currently offers parents. Response choices included classes for parents, parent newsletter, and websites developed by the program. Respondents were asked in what ways, if any, they had provided parents with information regarding children's nutrition or feeding. Six possible response choices included "I talk with parents," "I provide written information to parents," and websites.

To assess training interests and needs, respondents identified training topics they would like from a list related to children's eating, nutrition, and health. Response choices were derived from preliminary focus group data with early childcare program staff (Wood et al., 2009) and the literature. Topics included using program mealtimes for teaching healthy eating to young children (Nahikian-Nelms, 1997), introducing children to new foods (Carr & Conklin, 2002), addressing eating issues (Daniels, Fanco, & McWhinnie, 2003; Hertzler & Frary, 1999), making mealtimes a positive experience for children (Carr & Conklin, 2002; Hertzler & Frary, 1999), using food and nutrition guidelines for young children (Carr & Conklin, 2002;

Daniels et al., 2003; Drake, Greenspoon, Unti, Fawcett, & Neville-Morgan, 2006; Hertzler &

Frary, 1999; Moore et al., 2005), involving children in food related activities (Daniels et al.;

Hertzler & Frary, 1999), and offering healthy foods and snacks (Daniels et al.; Hertzler & Frary,

1999). In addition, respondents rated how useful they thought selected training topics would be

to staff in their program to support interactions with parents. The training topics were knowing

when an eating problem requires a "provider-parent conference"; handling parent

communication about child feeding with tact and sensitivity; and when and how to refer parents

to resources about child feeding and nutrition (1 = not at all useful, 2 = somewhat useful,

3 = very useful). Lastly, one item asked the respondent to identify which modes of training they

prefer (e.g., one-on-one; group) (Carr & Conklin, 2002).

Staff interests related to communicating with parents were assessed. First, respondents

were asked how likely they would be to use each of six selected nutrition education materials

with parents, including recipes that children like from the program, tips for food shopping, and

guidelines for handling picky eaters (1 = not at all likely, 2 = somewhat likely, 3 = very likely).

Next, respondents reported how likely it would be for them to use selected materials that offer

tips or guidelines *for communicating with* parents. The six response choices included what foods

their child is eating at a program, how much their child eats at a program, and their child's

weight (1 = not at all likely, 2 = somewhat likely, 3 = very likely). Additionally, respondents

were asked whether they would use selected resources to communicate with parents regarding

children's eating. The five responses were categorized either as "about their own child's eating"

(e.g., a written report provided every day or at the request of the parent), or "about children's

eating in general" (such as a parent newsletter or program website for parents) (1 = yes, 2 = no).

Attitudes toward communicating with parents were assessed. Respondents were asked if they believe it is a teacher's job to communicate with parents about their child's healthy eating, nutrition, and weight. For this item, a total of eight possible topics of communication were derived from preliminary data and included *what* and *how much* their child eats at the program, if their child tried a new food or refused to eat that day at the program, and if staff has concerns that their child is underweight, overweight, or obese (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree). As a comparison variable, respondents were also asked how comfortable they would feel communicating with parents about the same eight topics (1 = not at all, 2 = somewhat, 3 = very).

Preliminary focus group findings (Wood et al., 2009) were used to develop measures assessing childcare staff communication with parents about their child's body weight. One question assessed how respondents would feel about approaching parents to talk about their child being overweight. Nine attitudinal response choices included "responsible for taking action," "willing to take action," and "uncomfortable" (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree). Respondents were asked how often they talk with parents about a child being overweight (1 = daily, 2 = weekly, 3 = monthly, 4 = less than monthly, 5 = never). Another item asked how respondents think that a teacher should respond when there is an overweight or obese child at a program. The responses were, "talk to the parent," "talk to the program Director," and "take no action" (circle all applicable). Respondents also reported how likely they would be to talk to a parent about his or her child being overweight under selected conditions (1 = not at all likely, 2 = somewhat likely, 3 = very likely). The nine conditions included "if I had my supervisor's support," "if I had a good relationship with the parent," and "if I had specific training." Lastly, respondents were asked how much they agreed

or disagreed with the statement, "If childcare staff at the program have concerns that a child is overweight or obese, it is the responsibility of the program to communicate with parents about it" (1 = strongly disagree, 2 = somewhat disagree, 3 = somewhat agree, 4 = strongly agree).

Personal characteristics included the respondent's age, gender, education level, height and weight (for Body Mass Index estimation), ethnicity, training received (e.g., related to child development or nutrition) (Sigman-Grant et al., 2008), years of work experience in early childhood programs, job title, and age group of children with which a respondent currently works (Sigman-Grant et al.). In addition, the respondent was asked about his or her proximity to and involvement with children at mealtimes. The response choices were "I sit with the children," "I am in the room but don't sit or eat with the children," and "I am not in the room with the children during mealtime" (Sigman-Grant et al.). For center characteristics, the respondent was asked to report the number of children enrolled at his or her program, the food service style (Sigman-Grant et al.), participation in the Child and Adult Care Food Program (1 = yes, 2 = no), and the availability of training equipment at the respondent's center (Carr & Conklin, 2002). Response choices for food service style (Sigman-Grant et al.) were buffet line, pre-plated meals, family style, lunch boxes from home, and partial lunch boxes or partial program food.

Reliability and Validity

A stratified peer review and pre-testing protocol was conducted to enhance the validity and reliability of the questionnaire. Initially, peer review was conducted by a committee of research experts in early childhood development, child nutrition, and behavioral nutrition to determine the fit of the questionnaire items to the research objectives. Next, the Social and Economic Sciences Research Center at WSU reviewed the questionnaire for appropriate formatting, readability, and clarity. Subsequently, four staff from early childhood programs were

recruited for a cognitive pre-testing of the questionnaire. Cognitive pre-testing is a method to reduce response error and to evaluate the quality of the questionnaire by determining if the respondents interpret questions and terms as the investigators intended (Alaimo, Olson, & Frongillo, 1999; Drennan, 2003). The four pre-test respondents represented childcare teachers with varying educational backgrounds. The questionnaire was emailed to the pre-test respondents and a follow-up phone call was conducted using a prepared interview schedule. A thank-you gift of $20 was sent to each respondent. Respondents took approximately 15 minutes to fill out the questionnaire and ranged from 15 to 50 minutes for the follow-up cognitive pre-testing interview. The interviews were audio-taped and summarized, including quotes for key concepts (Appendix B). A research committee member reviewed the audio-taped interviews for accuracy of the summary. As a result of the pre-testing, minor changes were made to some items and response categories.

Questionnaire Implementation

Survey implementation followed the Tailored Design Method (TDM) (Dillman, 2000) for mail surveys, including a booklet style questionnaire and multiple mailings to prompt response. In a departure from the TDM, the pre-notice letter and a second replacement questionnaire were eliminated. A total of 323 questionnaires were returned with an overall response rate of 32%. Among these, 23 questionnaires were returned as undeliverable, and 29 questionnaires were unusable because the subject did not meet the criteria (i.e., not working with preschoolers or retired) (n = 22), the questionnaire was not fully completed (n = 6), or the data did not appear accurate (n = 1). The final usable questionnaire response rate was 27% (n = 271).

Data Analysis

The data were entered into Microsoft Excel 2003 and analyzed using SAS version 8.2 (SAS Institute Inc., 2001). Univariate statistics were generated to summarize the data. Kendall's tau *b* for ordinal data tested bivariate relationships in three ways: (a) relationships between the likelihood of staff using materials with parents for specific nutrition content and the likelihood of staff using materials specifying communication tips or guidelines for use with parents; (b) relationships between perceived roles of teachers in communicating with parents about child's eating, nutrition, and body weight, and the reported level of comfort staff feel when talking to parents about these topics; and (c) the frequency of talking with parents about child's overweight related to attitudes toward talking with parents about child's overweight. The chi-square statistic was used to test associations between topics or ideas of interest for training and personal or site characteristics. Principal components factor analysis (PCFA) was conducted to elicit patterns of response from multiple choice items with ordinal response scales: specifically, perceived roles of teachers related to children's eating, nutrition, and body weight; level of comfort with communicating with parents about these topics; and feelings toward communicating with parents related to a child being overweight. Parameters used were orthogonal rotation and an eigenvalue cut-off = 1. Factor loadings used for interpretation were ≥ |0.45|. Pearson's *r* was used to test correlations between factor scores and respondents' age, years of work experience, and Body Mass Index (BMI). Significance level for all statistical tests was set at $p < 0.05$.

RESULTS

Respondent Characteristics

Personal characteristics for the sample of 271 of early childhood program staff ("staff")

are shown in Table 1. The average age of the respondents was 48.3 ± 10.7 years, with a range of

22 to 68 years; most (62%) ranged from 40-59 years old. Respondents were predominantly

non-Hispanic White or Caucasian (82%) and female (98%). A majority of respondents (83%)

reported that their highest educational level was associate degree or higher. Respondents'

training experience included child development or early childhood education (99%), physical

activity and active play (83%), and/or nutrition (75%) (data not shown). Training in feeding

children (48%) and childhood overweight (24%) was less widespread. BMI was estimated for

$n = 259$ with a mean of 26.2 ± 5.2 kg/m^2 (range = 17.1-45.2 kg/m^2) (Table 1). Approximately

one-half of respondents were categorized as either overweight (30%) or obese (19%).

Selected characteristics of respondents' employment in childcare are displayed in

Table 2. Most respondents were working as a head teacher (46%) and/or teacher (35%). Mean

years of work experience in early childhood programs was 17.1 ± 9.1, with 62% having worked

between 6 and 20 years. Most respondents (94%) were working with preschoolers (3 to 5 years).

A majority of respondents (83%) reported that they sit with children at mealtimes.

Site Characteristics

Respondents reported selected characteristics of the programs where they were currently

working (Table 3). Forty-four percent worked at sites enrolling over 75 children. Family style

was the most used food service style among respondents' sites (42%). Nearly one-quarter (24%)

of respondents reported that their programs participate in the Child and Adult Care Food

Program. A majority of respondents reported that their programs had training equipment that included a computer (87%), computer printer (81%), and internet access (80%).

Nutrition Support at Sites

Nutrition support activities at respondents' sites are reported in Table 4. Sources on nutrition or feeding children offered to parents by the respondents' programs showed that programs predominantly used printed information such as pamphlets or brochures (60%) as opposed to in-person programming. In-person programming included staff referral to a healthcare provider outside the program (26%), classes (17%), and/or consultation (16%) for parents. Respondents' nutrition support activities included talking with parents (60%) and/or providing written information to parents (58%) (Table 4).

Nutrition resources used by the respondents in their current position included books, such as textbooks (64%). National program resources included MyPyramid (60%) and 5-A-Day (27%) materials, as well as the Sesame Street Nutrition Curriculum (5%). Some respondents (n = 17) circled "other" resources and wrote in unsolicited examples, including formal curriculum (e.g., curriculum at site) (n = 5), informal sources (e.g., magazines or websites) (n = 4), and local experts (n = 3). Few respondents had not used any nutrition resources (14%).

Training Topics Desired by Early Childhood Program Staff in Support of Healthy Eating for Young Children

Table 5 presents staff's desired nutrition training topics and preferred methods of training. The most frequently identified topics were physical activity and active play (64%), involving children in food related activities (63%), and introducing children to new foods (62%). Group training appeared to be preferred over individual instruction.

Perceived usefulness to other program staff of training topics that relate to child nutrition or feeding issues was also assessed (Table 6). At least 93% of respondents reported that all three topics were somewhat or very useful; therefore, respondents anticipated considerable interest among other staff in training related to making judgments about when to offer parents one-on-one conferences or referrals and handling parent communications sensitively.

Variables Related to Desired Training Topics

There were significant associations between respondents' personal characteristics and their interest in training topics. Although respondents' educational level was not related significantly to their interest in training topics, respondents' training experience did show significant associations. Respondents who received training about feeding children were more likely to be interested in "making mealtimes a positive experience for children at the program" (chi-square, $p < 0.05$). Respondents with training experience about nutrition tended to be interested in "addressing eating issues" ($p < 0.01$). Further, those who did not receive training about "physical activity and active play" were more likely to show interest in "physical activity and active play" ($p < 0.05$). Respondent's proximity to and involvement with children at mealtime had no significant association with any specific training topics.

Respondents who received training in either feeding children (chi-square, $p < 0.05$) or nutrition ($p < 0.01$) were more likely to mark "other" for desired training topics and wrote in additional topics. These topics included supporting parents with tips and training (e.g., helping parents with children's poor eating habits), handling cultural food differences (e.g., culturally appropriate ways to provide information), and handling children's special dietary needs (e.g., related to allergies).

Selected site characteristics were significantly associated with respondents' interest in training topics. Respondents whose sites used pre-plated meals were more likely than others to be interested in "making mealtimes a positive experience for children at the program" (chi-square, $p < 0.05$). Respondents interested in "using food and nutrition guidelines for young children 2 to 5 years of age" also tended to be from sites with partial lunch boxes (or partial program food) ($p < 0.05$) or those that did not use family style meal service ($p < 0.05$). Moreover, respondents whose programs participated in the Child and Adult Care Food Program were more likely than respondents from non-participating programs to be interested in "weight issues with young children" ($p < 0.05$), but not "using food and nutrition guidelines for young children 2 to 5 years of age" ($p < 0.05$). The total number of children enrolled at respondents' sites did not relate significantly to respondents' interest in training topics.

Likelihood of Using Materials with Parents about Nutrition and Healthy Eating for Young Children

Early childhood program staff reported how likely they would be to use nutrition materials with parents (Table 7) as well as tips or guidelines for communicating with parents about nutrition (Table 8). A majority of respondents reported that they would very likely use "guidelines for healthy eating for young children" (80%), "recipes that children like" (72%), or "guidelines for handling picky eaters" (68%) (Table 7). Other nutrition materials such as tips for food shopping and cooking at home were less likely to be used. Further, more than one-half of respondents reported that they were very likely to use tips or guidelines for communicating with parents about "program routines related to mealtimes" (65%), "nutritional quality of the program's food" (61%), or "what foods the child is eating at the program" (56%) (Table 8). A majority of respondents were at least somewhat likely to use tips or guidelines for

communicating with parents about "how much their child eats at the program," "their child's picky eating," or their child's weight. There were significant positive correlations between all the items assessing the likelihood of using content based materials and the items expressing the likelihood of using communication oriented materials with parents (Kendall's tau *b,* p < 0.01).

A principal components factor analysis (PCFA) was conducted to explore independent patterns of how likely staff would be to use nutrition materials with parents (Table 9) and tips or guidelines for communicating with parents (Table 10). In each case, a single factor pattern emerged. The pattern for likelihood of using nutrition materials (Table 9), "Food, nutrition, and weight guidelines with parents" expressed respondents' interests in using a range of content with parents, most prominently with food topics (e.g., tips for cooking). Potentially challenging issues loaded highly on this factor, including guidelines or ideas for addressing overweight as well as handling picky eaters. This pattern accounted for 60% of the variance in the original variable set. The factor pattern for likelihood of using communication tips and guidelines (Table 10), "Parent communication guidelines for nutrition, eating, and weight," reflects the value to respondents of communication support when talking with parents about their child's eating at the program and what the program provides as meals and nutrition. The variance accounted for with this single pattern was 60%. Interest in content and/or communication guidelines related to overweight or a child's weight loaded significantly on both patterns (Tables 9, 10).

It was of interest to test factor scores from PCFA results for correlation with selected personal characteristics. For these correlation tests, a higher factor score indicates that the individual's responses more closely follow the factor pattern. Factor scores from "Food, nutrition, and weight guidelines with parents" (Table 9) positively correlated with respondents' years of work experience (Pearson's $r = 0.22$, p < 0.001), but not age or BMI. Factor scores for "Parent

communication guidelines for nutrition, eating, and weight" (Table 10) did not significantly correlate with respondents' years of experience, age, or BMI. A positive correlation was found between the factor scores for these two factor patterns (Tables 9, 10)(0.52, p < 0.0001). This indicates that respondents who would more likely use "Food, nutrition, and weight guidelines with parents" (Table 9) also would more likely use "Parent communication guidelines for nutrition, eating, and weight" (Table 10).

Staff were asked to identify from a list of specific resources which ones they would use in communicating with parents about young children's healthy eating. In relation to communicating with parents about their own child's eating, 84% of respondents reported that they would use a "written report at the request of the parent," but only 30% reported that they would use a "written report provided every day." Related to communicating about children's eating in general, many respondents reported that they would use a "parent newsletter" (85%), "program website for parents" (67%), and/or "program policies written for parents that explain mealtimes and feeding children" (83%).

Perceptions of a Teacher's Job Related to Communicating with Parents about Their Child's Eating, Nutrition, and Body Weight

Respondents were asked how much they agreed or disagreed that it is part of a childcare teacher's job to communicate with parents about their child's eating, nutrition, and body weight (Table 11). Most respondents strongly agreed that it is a teacher's job to communicate specific observations about a child's daily eating to the parents, including "if their child refused to eat that day at the program" (73%) or "if their child tried a new food that day at the program" (60%). A majority of respondents (62%) also strongly agreed that communicating with parents about "healthful eating in general for young children" is part of the teacher's job. Less agreement was

34

seen among respondents related to reporting what a child ate that day or when staff judgment was involved in assessing how the child is eating (i.e., *concerns about* how much or what the child eats at the program). Perceptions were notably more negative regarding concerns about weight issues; about one-quarter of respondents disagreed that it is part of a teacher's job to communicate with parents if they have concerns that a child is underweight (25%) or overweight or obese (26%).

How comfortable respondents reportedly felt communicating with parents about the same issues with their child's eating, nutrition, and body weight is shown in Table 12. A majority of respondents reported that they were very comfortable talking to parents about what their child ate at the program as well as healthful eating in general, including "if their child refused to eat that day at the program" (89%), "if their child tried a new food that day at the program" (88%), or "about what their child ate that day at the program" (85%). However, respondents overall reported less comfort talking to parents when needing to express concerns about how much or what the child is eating. A majority of respondents appeared at least somewhat comfortable talking to parents about weight issues; however, some reported that they were not at all comfortable talking to parents if they have concerns that the child is underweight (15%) or overweight or obese (20%).

Years of work experience did not significantly correlate with agreement or disagreement with items describing a teacher's job to communicate with parents about child's eating, nutrition, and body weight. Respondents who had more years of work experience were likely to report feeling less comfortable communicating with parents "if their child refused to eat that day at the program" (Kendall's tau $b = -0.12$, $p < 0.05$). By contrast, more years of work experience related to feeling more comfortable communicating with parents "if I have concerns that their child is

35

underweight" (0.14, p < 0.01), "if I have concerns that their child is overweight or obese"

(0.12, p < 0.05), "if I have concerns about what their child eats at the program" (0.10, p < 0.05),

and "about healthful eating in general for young children" (0.10, p < 0.05).

PCFA tests revealed patterns of agreement about a teacher's job related to

communicating with parents (Table 13) and reported level of comfort communicating with

parents (Table 14) related to their child's eating, nutrition, and body weight. In Table 13, two

factor patterns emerged, accounting for 68% of the total variance. The first factor,

"Communicating concerns about weight and eating," reflected staff views that it is a teacher's

job to communicate concerns about whether a child is over- or underweight as well as *what* and

how much a child eats at the program. The second factor, "Communicating about the child's

daily eating," represented the concept that a teacher should communicate specific observations to

parents about a child's daily eating at the program. For respondents' reported level of comfort in

communicating with parents, the PCFA revealed two factor patterns accounting for 68% of the

total variance in the original variable set (Table 14). The first factor, "Comfortable

communicating about concerns regarding weight and eating," suggests that those respondents

who are reportedly comfortable communicating concerns about the child's weight are also

comfortable communicating potentially related concerns about *what* and *how much* a child eats.

The second factor pattern, "Comfortable communicating about daily eating," suggests that staff

are comfortable communicating with parents about more descriptive and behavioral aspects of a

child's daily eating at the program.

Overall, there were similar factor patterns derived from the staff's views about a

teacher's job related to communicating with parents (Table 13), and staff's reported level of

comfort in communicating with parents (Table 14), about their child's eating, nutrition, and body

weight. The items loading highly on the first factor pattern in Table 13, "Communicating concerns about weight and eating" were very similar to those loading highly on the first factor pattern in Table 14, "Comfortable communicating about concerns regarding weight and eating" and were in the same order by factor loadings. One item loaded differently in the two sets of data; "healthful eating in general for young children" loaded onto factor two in Table 13—that is, it was significantly associated with communicating daily eating information as an expected role of the teacher—yet it was associated with the first factor in Table 14 that represented a greater reported level of comfort in communicating about weight and eating. In summary, PCFA results showed that there are specific patterns of communicating with parents that are expected of a teacher and that they are similar to the patterns of communication that appear to be comfortable for certain staff.

Given the similarity of factor patterns between Tables 13 and 14, factor scores from these patterns were tested for inter-correlations to determine if the staff who identify certain communication patterns as part of a teacher's job also reported feeling comfortable practicing them. Respondents who agreed that "Communicating concerns about weight and eating" is part of a teacher's job (Table 13) were also more "Comfortable communicating about concerns regarding weight and eating" (Table 14) (Pearson's $r = 0.63$, $p < 0.0001$) as well as more "Comfortable communicating about daily eating" (Table 14) (0.15, $p < 0.05$). In addition, those who agreed that "Communicating about the child's daily eating" is part of a teacher's job (Table 13) also appeared to be more "Comfortable communicating about daily eating" (Table 14) (0.28, $p < 0.0001$). There was evidence that respondents who agreed that "Communicating about the child's daily eating" (factor 2, Table 13) was part of a teacher's job were not necessarily

37

"Comfortable communicating about concerns regarding weight and eating" (factor 1, Table 14) (n.s. Pearson's *r*).

Factor scores from factor patterns in Tables 13 (roles of the teacher) and 14 (level of comfort with roles of the teacher) were further tested for correlation with selected personal characteristics of staff. Years of work experience, age, and BMI did not significantly correlate with factor scores from "Communicating concerns about weight and eating" or "Communicating about child's daily eating" (Table 13). However, respondents who had more years of work experience were likely to feel more "Comfortable communicating about concerns regarding weight and eating" (Pearson's $r = 0.19$, $p < 0.01$) and less "Comfortable communicating about daily eating" (-0.16, $p < 0.01$) (Table 14). In addition, younger respondents were likely to feel more "Comfortable communicating about daily eating" (-0.23, $p < 0.001$) (Table 14).

Perceptions about Early Childhood Overweight and Obesity in the Early Childhood Program Setting

Respondents were asked how often they talk with parents about a child being overweight. More than one-half of respondents reported that they never talked with parents about a child being overweight (52%). Others reported that they talked less than monthly (35%), monthly (8%), or weekly (2%). None reported talking daily with parents (2% were Missing).

Respondents were queried about handling situations related to children's weight. First, they were asked how a teacher should respond if he or she has concerns that a child at the program is overweight or obese. A majority of respondents would take some action, including "talk to the program director" (79%) and/or "talk to the parent" (54%). Only 4% of respondents reported "take no action." Many (n = 93) respondents circled "other: please specify" and wrote in alternative actions, including involving specialists (e.g., consult with school nurse) (n = 44),

38

finding information to share with the parents (n = 20), "depends on the circumstances" (e.g., on the relationship with parents) (n = 6), and/or talking to other staff (n = 5). In a related item, respondents reported how much they agreed or disagreed with the statement: "If childcare staff at the program have concerns that a child is overweight or obese, it is the responsibility of the program to communicate with parents about it." Most either somewhat (52%) or strongly agreed (24%) with the statement. Twenty-four percent of respondents disagreed (9% strongly disagree; 15% somewhat disagree).

Table 15 shows data for respondents' reported feelings about approaching parents to talk about their child being overweight. The three attitudes with the most responses for strongly or somewhat agree related to how the respondents thought the parents might react or how parents might feel. These items were "worried that parents will take offense" (82%), "hesitant when parents have different cultural beliefs" (79%), and "worried that parents will deny there's a problem" (78%). Overall, the items with the most agreement reflected negative feelings such as worried, hesitant, or uncomfortable. By contrast, fewer respondents revealed positive feelings (i.e., willing or confident) or feelings linked to action (i.e., responsible for taking action).

Respondents were asked how likely they would be to talk to a parent about his or her child being overweight given specific situations or circumstances (Table 16). A majority of respondents would very likely talk to a parent "if the parent brought up the subject first" (82%) or "if an overweight child had a health condition" (74%). Having a good relationship with the parent was also key for many staff (68%) in being very likely to talk to a parent about his or her child being overweight. Respondents were very likely to talk to a parent with support from program policies (63%), guidelines or tips on how to talk with the parent (62%), and/or specific training (61%). Overall, more than 81% of respondents reported that they would be at least

39

somewhat likely to talk to a parent about their child being overweight given any of the situations or circumstances.

Items expressing negative feelings toward talking to parents about their child being overweight (Table 15) were tested for positive correlations with the likelihood that staff would talk to a parent about their child being overweight given certain situations (Table 16). This test was conducted to identify those situations that could potentially lead staff to talk with a parent despite the staff's expressed negative feelings. Respondents who felt more "worried that parents will deny there's a problem" reported that they would be more likely to talk to a parent about their child's overweight "if the parent brought up the subject first" (Kendall's tau $b = 0.13$, $p < 0.05$) or "if I had my supervisor's support" (0.12, $p < 0.05$). No other significant correlations were found.

How often respondents reportedly talked with parents about a child being overweight was tested for correlation with reported feelings about communicating with parents about overweight, as staff frequency of communication is likely to be connected with staff attitudes in the area of children's weight issues. Respondents who talked more frequently with parents about a child being overweight (1 = daily, 2 = weekly, 3 = monthly, 4 = less than monthly, 5 = never) were more likely to agree with the statement: "If childcare staff at the program have concerns that a child is overweight or obese, it is the responsibility of the program to communicate with parents about it" (Kendall's tau $b = -0.20$, $p < 0.001$). Respondents who talked more often with parents about a child being overweight were more likely to express positive feelings about approaching parents to talk about their child being overweight, including "responsible for taking action" (-0.37 $p < 0.0001$), "willing to take action" (-0.32, $p < 0.0001$), and "confident, because I am qualified" (-0.32, $p < 0.0001$). By contrast, those who talked less frequently were more likely

to express negative feelings about approaching parents to talk about their child being overweight, including "unprepared because I lack training" (0.28, $p < 0.0001$), "concerned that I am interfering" (0.25, $p < 0.0001$), "uncomfortable" (0.22, $p < 0.001$), "hesitant when parents have different cultural beliefs" (0.20, $p < 0.001$), and "worried that parents will take offense" (0.13, $p < 0.05$). In addition, respondents who talked more frequently with parents were also more likely to talk with parents under almost all situations or circumstances in Table 16 (Kendall's tau b, $p < 0.01$) except for "if the parent brings up the subject first."

A PCFA was conducted with responses to feelings toward talking to parents about their child being overweight (Table 17). Two factor patterns emerged that explained 63% of the total variance. The first factor, "Feeling worried and hesitant about parents' reactions," shows a set of negative feelings about approaching parents to talk about their child being overweight. Attitudes that loaded highly on this factor pattern related to respondents' perceptions of how parents might react or feel. By contrast, the second factor pattern, "Feeling responsible, willing, and confident," reflected staff's positive feelings about approaching parents to talk about their child being overweight. These results reflect very opposite patterns of expressed feelings and potential readiness to act as it relates to talking to parents about their child being overweight.

Table 18 shows results of a PCFA of responses to the likelihood of talking to parents about their child being overweight given certain situations. In this case, a single factor pattern—"Likely to talk if have multiple program supports"—emerged that accounted for 61% of the variance in the original variable set. This factor pattern expressed the potential need for multiple supportive situations before many respondents would likely talk with a parent: most importantly, program-based support that includes guidelines or tips on how to talk to parents, guidelines or policies to support the respondents' actions, specific training, the supervisor's

41

support, and the willingness of other staff. A good relationship with the parent also loaded highly on this factor pattern.

Correlations were conducted between factor scores from factor patterns in Tables 17 and 18 and selected personal variables, in that respondents' attitudes toward potentially sensitive communications with parents about weight issues could be influenced by their personal characteristics. Respondents' years of work experience, age, and BMI were not significantly correlated with factor scores from "Feeling worried and hesitant about parents' reactions" (factor 1, Table 17) or "Likely to talk if have multiple program supports" (Table 18). However, those who had more years of work experience were more likely to report "Feeling responsible, willing, and confident" (factor 2, Table 17) (Pearson's $r = 0.13$, $p < 0.05$).

DISCUSSION

Sample Characteristics

This study sample tended to be older, more Caucasian in ethnicity, and to have more years of work experience and a higher educational level than was found in research with other early childhood program groups. More females responded to the survey (98%) than were identified for the overall membership in the NAEYC mailing list (84%) from which the sample was obtained. Compared to a survey sample of childcare staff at centers from California, Colorado, Idaho, and Nevada (Sigman-Grant et al., 2008), the survey sample had similar percentage of females (98% versus 99%), a higher mean age (48.3 ± 10.7 years versus 38.9 ± 0.6 years), and more non-Hispanic Whites or Caucasians (82% versus 58%). The sample also had more mean years of work experience (17.1 ± 9.1 years) than that reported for California (12.2 ± 0.6 years, the highest mean by state) in the Sigman-Grant et al. survey. For educational level, more respondents (83%) had at least an associate degree or higher compared to the

42

Sigman-Grant et al. findings (50%) and a sample of Directors of programs participating in the Child and Adult Care Food Program (68%) (Carr & Conklin, 2002). A higher rate of reported overweight (30%) and a lower rate of reported obesity (19%) were seen in our study compared to NHANES 2003-04 data for women aged 40-59 years (28.2% overweight; 36.7% obese) (Wang & Beydoun, 2007). Our survey sample had higher reported rates of overweight and obesity compared to a sample of the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) staff that included nutritionists, nutrition assistants, and office support staff (30% versus 26.1% overweight; 19% versus 12.5% obese) (Serrano, Gresock, Suttle, Keller, & McGarvey, 2006).

Despite their higher level of work experience and education compared to childcare staff samples, this sample appeared typical in training background relative to feeding children. In the Sigman-Grant et al. (2008) survey, the prevalence of training experience in feeding children varied among job titles, as follows: two-thirds for directors, 56% for cooks, and 43% for teaching staff; this compares to 48% for teachers in the present sample. States may have their own training requirements for early childhood program staff. Most respondents (83%) sat with children during meals, verifying a baseline of mealtime experience for this sample in interacting with children during meals and being knowledgeable about program food.

Communication Issues with Parents about Feeding, Nutrition, and Weight Issues in Young Children

Attitudes towards communicating with parents represented a novel area of investigation in this study, with the potential to inform staff training and support related to feeding, nutrition, and weight issues with young children. When respondents expressed their perceptions of the teacher's job related to communicating with parents about these topics, their responses appeared

43

based on whether the communication involves *concerns* or *judgments* as opposed to specific

observations. Factor patterns in Table 13 support this interpretation in that the items in the first

pattern, "Communicating concerns about weight and eating," imply that the teacher should make

and convey to the parent an evaluation or judgment about a child's eating or weight. According

to the guidelines jointly developed by several organizations, program staff are advised to share

information with parents about "observations, concerns, and comments" for children (American

Academy of Pediatrics (AAP), American Public Health Association (APHA), & National

Resource Center for Health and Safety in Child Care and Early Education (NRC), 2002). By

contrast, the second pattern, "Communicating about the child's daily eating," appears to shift the

teacher's role to a more descriptive one where the teacher conveys observations about a child's

eating or information about healthy eating for children. Neither of the factor scores from these

two factor patterns correlated significantly with respondents' years of work experience, age, or

BMI. Numerous program factors not measured in this study could potentially influence

respondents' perceptions of a teacher's role, including policies and operations, the availability of

healthcare professionals, and staff training in specific areas of feeding children. Further,

respondents who agreed that it is part of a teacher's job to communicate specific *observations* to

parents (factor 2, Table 13—"Communicating about the child's daily eating") were not

necessarily comfortable communicating with parents about *concerns* or *judgments* (factor 1 in

Table 14, "Comfortable communicating about concerns regarding weight and eating"), as

evidenced by a lack of significant inter-correlation between these two factor scores. It might be

expected that staff who sit with the children during mealtimes are able to describe a child's daily

eating. However, communicating concerns to parents likely involve other factors such as the

respondent's skill in finding and using information about child feeding and nutrition, local guidelines for interacting with parents, and the respondent's relationship with the parent.

Support for Effective Communication with Parents about Children's Healthy Eating

Early childhood program staff's level of comfort in communicating with parents about feeding and nutrition is derived in part from knowledge as well as a process for communication. Other data in this survey fill in some of the gaps about what knowledge and processes staff think are involved.

There is an apparent need for support related to young children's picky eating. In particular, a vast majority of respondents (96%) appeared somewhat or very likely to use "guidelines for handling picky eaters" with parents, while almost as many (90%) were somewhat or very likely to use tips or guidelines for communicating with parents about their child's picky eating. Other studies show that a child's picky eating presents a challenge to staff and parents alike. In a survey study with U.S. Department of Agriculture childcare staff, 48% reported the occurrence of refusal of new foods and picky eating as fairly often or widespread among preschool children (Hertzler & Frary, 1999). In focus groups with a multi-ethnic sample of mothers of preschoolers (Sherry et al., 2006), mothers reported food conflicts and changing likes and dislikes as challenging factors affecting child feeding. Further, picky eating can be a barrier to children's healthy eating. Childcare staff in Canadian centers reported that picky eating can be extreme, resulting in total refusal of food for some children or refusal of vegetables or other healthy foods for others (Needham, Dwyer, Randall-Simpson, & Heeney, 2007). Parents of children 2-5 years of age in a focus group study reported that barriers to getting their young children to eat healthfully include both the children's refusals of healthy foods and their preference for high sugar and high fat foods (Dwyer, Needham, Simpson, & Heeney, 2008). The

AAP, APHA, and NRC (2002) recommend that childcare staff talk with parents about a new food before presenting it to children. A child's picky eating may be an area that both staff and parents need to address as a team.

Problematic feeding issues, including food refusals at the center, may test the staff-parent relationship. In a study of caregivers and parents from center-based and family childcare programs, parents' confidence in caregivers appeared to be based in part on the parents' perceptions of the caregivers' skills and knowledge related to child development and childcare (Elicker et al., 1997). Talking to a parent about food refusals and other picky eating behaviors may seem to the staff to show a lack of their own skill with the child. By contrast, the staff member may feel that he or she is bringing to light a problem with child feeding for which the parent is responsible. Enhancing staff's skills in reporting on a child's eating issues to his or her parent may enhance staff confidence in this area of practice and interactions with parents.

Findings point to an interest in tips, guidelines, and resources for staff to use in communicating with parents. Respondents were reportedly very likely to use tips or guidelines for communicating with parents about "program routines related to mealtimes" (65%), "nutritional quality of the program's food" (61%), and "what foods the child is eating at the program" (56%). In relation to communicating about children's eating in general, respondents reported that they would use a parent newsletter, program policies about mealtimes and feeding children, and/or a program website. For communicating with parents about their own child's eating, a written report at the request of the parent was likely to be used. However, few (30%) respondents said they would use a "written report provided every day"; this type of report may be more typically used by respondents who are working with infants or toddlers and may not be used for preschoolers by program policy. However, the collaborative guidelines by AAP, APHA,

and NRC (2002) advise program staff to share information every day with parents—which could include a report, daily conversation, or other—regarding observations and concerns about infants, toddlers, and preschoolers. Although a daily written reporting format would not apparently be used by most respondents, many appeared to value having a reporting format for communicating to parents about individual children.

An additional need may exist to support how staff refer a parent to a healthcare provider. According to the recommendations jointly developed by the AAP, APHA, and NRC (2002), a childcare program should provide families with access to healthcare providers for addressing issues that could influence children's growth and development. However, only about one-fourth of respondents' programs referred to a healthcare provider outside the program (26%) and fewer (16%) reportedly provided a healthcare provider at the site. Children's health problems may not arise for many staff. However, the importance of this nutrition support was also expressed as expected interest of other program staff in the following: (a) knowing when an eating problem requires a provider-parent conference, and (b) when and how to refer parents to resources about child feeding and nutrition. Staff may play an important role in making a judgment if a child needs nutrition support or healthcare, and their decisions can be significant input to support the child's growth and development.

Patterns of Response by Years of Experience Working in Early Childhood Programs

Given that our sample of early childhood program staff were older, more educated, and more experienced than some staff samples, it was informative to see how responses differed by years of experience. Respondents who had more years of work experience were likely to report feeling more comfortable communicating with parents in several domains, including if the staff as a whole has concerns about the child being underweight or overweight, about what a child

47

eats at the program, and "about healthful eating in general for young children." At the multivariate level of analysis, respondents who had more years of work experience were more likely to report positive attitudes toward approaching parents about their child being overweight (factor 2 in Table 17, "Feeling responsible, willing, and confident"), and they were also likely to report feeling more "Comfortable communicating about concerns regarding weight and eating" (factor 1, Table 14). However, those who had more years of work experience also reported feeling less "Comfortable communicating about daily eating" (factor 2, Table 14), possibly due to the negative correlation found between years of work experience and level of comfort communicating with parents "if their child refused to eat that day at the program," an item that loaded significantly onto this factor. Experienced staff may have had negative experiences when communicating with parents about food refusals; our findings suggest that staff's experience has not provided solutions for communicating with parents about this issue. It was apparent that the more experienced the respondent, the greater his or her interest in nutrition support materials; that is, respondents with more years experience were more likely to show interest in multiple materials for "Food, nutrition, and weight guidelines with parents" (Table 9). Additional years in working in early childhood programs may mean that the respondent had more diverse, complex, and challenging experiences attempting to communicate with parents about child feeding, healthy eating, and weight issues. Experienced staff may have different educational needs compared to others.

Issues Related to Communicating with Parents about Their Child's Being Overweight

Health care professionals who talk with parents face challenges with topics that relate to a child's weight. Research with WIC staff showed that childhood overweight was the topic least frequently communicated to their clients for almost all classifications of staff

(Serrano et al., 2006). When a sample of pediatricians, pediatric nurse practitioners, and registered dietitians were surveyed about their perceived skill level and interests in training related to obesity management for children and adolescents (Story, Neumark-Stzainer, Sherwood, Holt, Sofka, Trowbridge, & Barlow, 2002), parent communication issues were critical. Specifically, guidance in parenting techniques and addressing family conflicts represented two of the topics most frequently associated with a low perceived proficiency level as well as high interest in training. Extension family life educators working with children from infancy to age 18 reported that a lack of information related to obesity prevention is one of the obstacles in their efforts to support parents in preventing childhood obesity (Lanigan & Power, 2008). Experience with obesity management may vary. It is possible that our sample has never talked with parents about these issues because there appear to be no overweight children at the program or because there are referrals for this situation. Early childhood program staff may not know what or how to communicate with parents about a child's weight. Program policies may advise staff not to talk directly with parents about weight issues.

There are gaps between reported perspectives and practices of our sample for the topic of communicating with parents about a child's overweight. One example is respondents' agreement that staff need to communicate with parents if they have concerns that a child is overweight or obese despite an apparent widespread lack of practice in doing so. Our findings showed that more than one-half of respondents (52%) have never talked with parents about their child's being overweight. When our sample was asked how a teacher should respond if she or he has concerns that a child at the program is overweight or obese, "talk to the program director" (79%) was a response more frequently selected than "talk to the parent" (54%). Nevertheless, many respondents (72%) agreed that it is a teacher's job to communicate with parents if staff has

concerns that a child is overweight or obese. This is supported by the joint guidelines by the AAP, APHA, and NRC (2002) that suggest holding parent conferences to discuss any issues concerning a child, including weight. Similar gaps in reported perspectives and practices related to managing pediatric obesity have been reported by pediatricians (Perrin, Flower, Garrett, and Ammerman, 2005). In a survey of members of the North Carolina Pediatric Society and American Academy of Pediatrics, 39% reported that physicians in general could potentially be highly effective with obesity management, whereas only 12% of the sample reported high self-efficacy for this area of practice. The gap between early childhood program staff's perspectives about children's weight issues and their apparent lack of experience with addressing weight issues may leave many unprepared for obesity prevention efforts at their sites.

Feelings of staff can be a significant influence on their communication with parents about their child being overweight. One-fifth of respondents said they were not at all comfortable talking to parents about their child being overweight. Other studies with staff from a variety of program settings have identified similar feelings. A study of WIC staff found that staff were the least comfortable talking with their clients about childhood overweight or obesity compared to other topics (e.g., fruit and vegetable consumption and physical activity) (Serrano et al., 2006). Head Start teachers in a focus group setting also reported that talking to parents about a child's weight is "touchy" and that they were uncertain about judging a child's weight or talking to a parent about a child's weight (Lumeng, Kaplan-Sanoff, Shuman, & Kannan, 2008). The present research identified types of feelings involved in approaching parents to talk about a child's overweight, including discomfort with interacting with the parent, a feeling of being unprepared to address weight, and hesitancy about the likely impact on the parent's feelings and subsequent reaction to the staff. In addition, the respondents' reported expectations of how parents might

50

react or feel may partly explain for negative feelings toward talking with parents about their child's overweight. Specifically, many respondents at least somewhat agreed that they would feel "worried that parents will take offense" (82%) and "worried that parents will deny there's a problem" (78%). It is important to note that the attitude, "hesitant when parents have different cultural beliefs," loaded highly on the factor pattern for this data (factor 1, Table 17). Barriers to addressing obesity prevention related to clients' different cultural beliefs have been reported by WIC staff (Serrano et al.) and family life educators (Lanigan & Power, 2008). Lastly, staff's own sensitivity with their body weight may influence communications with parents. Although a WIC study found that WIC staff with higher BMI expressed a lower level of comfort towards discussing topics related to childhood overweight with parents, no significant relationship was found in this study between factor scores from feeling "Comfortable communicating about concerns regarding weight and eating" and respondents' BMI. The roles of early childhood program staff with their specific client groups in the workplace—in particular, children versus adults—can affect how staff feel about weight issues and subsequently communicate with clients.

More frequent communication with parents appears related to more positive attitudes among staff. Respondents who talked more frequently with parents about a child being overweight were more likely to express positive attitudes toward communicating with parents about the issue. These respondents were more likely to (a) agree that if childcare staff has concerns that a child is overweight, it is the program's responsibility to communicate with parents about the issues; (b) express positive feelings toward approaching parents to talk about their child being overweight; and (c) report that they would talk with parents under almost all selected situations or circumstances. Unknown factors in this study include the nature of the

respondent's relationship with the parents, experience or lack of experience with overweight children in the program, program policies about children's weight, and communication channels staff use with parents.

Despite widespread negative feelings such as worry and discomfort about talking with parents related to their child's being overweight, there is evidence that staff would use materials with parents specifically for communicating about these issues. Many respondents reported that they would be at least somewhat likely to use nutrition materials related to "ideas for addressing overweight in young children" (90%) and tips or guidelines for communicating with parents about on the child's weight (79%). Also, 47% reported "weight issues with young children" as a desired training topic.

Aside from training and materials, various kinds of program support may be key for staff's effective communication with parents about weight issues. A single factor pattern ("Likely to talk if have multiple program supports") emerged from the data on likelihood of staff talking to a parent about their child's being overweight (Table 18). These findings suggest that a range of program-based factors are needed, from policies to supervisor and staff support, to augment training. In addition, part of the motivation of staff to approach a parent is apparently if an overweight child has a health condition; feelings about actions aimed at prevention of overweight need further assessment, and may involve different feelings on the part of staff.

Training Needs for Interacting with Children

This study provides evidence of interest in training related to interactions with children. Desired training topics identified by many respondents included "physical activity and active play" (64%), "involving children in food related activities" (63%), and "introducing children to new foods" (62%). A number of factors may relate to interest in physical activity training,

including that the current curriculum for physical activity is viewed as inadequate for staff or children. There may be a lack of physical activity curriculum or guidelines. In formative research by Bellows, Anderson, Gould, and Auld (2008) to develop physical activity for preschoolers, teachers were more likely to use their own self-collected materials, rather than a "formal curriculum"; this may be partly explained by the finding that the majority of teachers had not received training in physical activity for preschoolers. Staff may also desire the latest materials related to physical activity; many respondents (83%) reported receiving training in physical activity and active play, while 64% reported it as a desired training topic. "Introducing new foods to children" was identified as a desired training topic by more respondents in this teacher's survey (62%) compared to childcare directors (35%) (Carr & Conklin, 2002). Staff may also be interested in training to address gaps in cultural differences. As "other" desired topics, some respondents wrote about handling cultural food differences, such as culturally appropriate ways to provide information.

Finally, results support the idea that continuous training should be offered to early childhood program staff in the areas of nutrition, feeding, and overweight. This study suggests that these staff as a group have interest in further training after initial training, for example with physical activity. Moreover, respondents with more years of work experience were more likely to say that they would use nutrition materials about "Food, nutrition, and weight guidelines with parents"; that is, information on a variety of topics. This support is important for staff's efforts to maintain integrity of the program and their own practices.

Limitations

The research had limitations related to sampling. The 27% response rate to our mail survey was lower than that found in similar survey studies with childcare samples (54% for Carr

& Conklin, 2002; 41% for Sigman-Grant et al., 2008). Some respondents in this study worked with all age ranges, including infants, toddlers, and preschoolers, potentially influencing their views on early childhood nutrition, feeding, weight, and their communications with parents.

Certain limitations to measurement occurred. There was no assessment of availability at the sites of referrals to healthcare professionals, especially those who address children's weight issues. Program policies for communicating with parents about a child's weight issues—e.g., if staff are supposed to communicate with parents or not—were not assessed. Experience with interventions for preventing obesity in young children was not identified; this information could have helped with interpreting findings related to perceptions of a teacher's job as it involves communicating with parents about their child's being overweight. Self-reported height and weight may result in misclassification of actual weight status. Our questionnaire did not assess other personal characteristics related to body weight, such as if respondents were trying to lose weight, or their attitudes towards personal body weight. These characteristics are potential influences on perceptions of weight-related issues in the workplace.

CONCLUSIONS

There is a need to provide training for early childhood program staff utilizing updates and flexible formats to meet both individual and program needs. To support individual practice, staff training should encompass the following topics with continuous updates: (a) physical activity for young children; (b) healthy eating and nutrition for young children; (c) handling picky eating; and (d) obesity prevention efforts with young children and their parents. Guidelines for communicating with parents about these topics also would be of value. Additional benefits may be derived from offering staff ways to convey to parents information about program routines and nutritional quality of the program food: for example, reassuring parents about the

54

quality and details of nutrition support through the program and enhancing program reputation. To meet continuing individual and program needs, web-based training is a useful format as it provides a cost effective means to update and adapt educational materials. Web-based training may be accessed at the individual's convenience, and it can also be used in settings for group training.

There is evidence from this survey that staff are aware of overweight issues in young children and seek solutions that clearly define their roles and support their appropriate response. Talking with parents about these issues can spur negative feelings or avoidance on the part of staff. Therefore, there is a need for guidelines to support practices related to overweight issues, including the following: How program food and meal or snack routines as well as physical activity support healthy eating guidelines and healthy weights as an obesity prevention effort, how to approach parents with information about overweight and related feeding issues, and how to refer parents to additional support when needed.

Further research is needed to expand our understanding of staff training needs. More information is needed about the role of ethnic diversity in shaping staff attitudes towards communicating with parents about feeding, nutrition, and body weight in young children. This may be acquired either by sampling respondents from sites serving ethnic specific families, or via questions that probe cultural competency skills and experiences. Additional data are needed to identify important information gaps, such as the availability of referrals to healthcare professionals at sites, existing or planned program policies to communicate with parents about a child's weight issues, and experiences with interventions for preventing obesity in young children. Respondents' attitudes towards their own body weight should be investigated as a potential factor influencing staff behaviors and attitudes related to feeding and physical activity.

Further research is needed to determine experiences that staff have had in communicating with parents about feeding, nutrition, and body weight for young children, as it is associated with interest in communication support. This information will help stratify training support that meets both content and communication needs.

BIBLOGRAPHY

Alaimo, K., Olson, C. M., & Frongillo, E. A. (1999). Importance of cognitive testing for

    survey items: An example from food security questionnaires. *Journal of Nutrition*

    Education, 31, 269-275.

American Academy of Pediatrics, American Public Health Association, and National Resource

    Center for Health and Safety in Child Care and Early Education (2002). *Caring for our*

    children: National health and safety performance standards: Guidelines for

    out-of-home child care programs (2nd ed., pp.149-186). Elk Grove Village, IL:

    American Academy of Pediatrics and Washington, DC: American Public Health

    Association. Also available at http://nrckids.org.

American Diabetes Association. (2000). Type 2 diabetes in children and adolescents. *Diabetes*

    Care, 23(3), 381-389.

American Dietetic Association. (1999). Position of the American Dietetic Association: Nutrition

    standards for child-care programs. *Journal of the American Dietetic Association, 99*,

    981-988.

American Dietetic Association. (2005). Position of the American Dietetic Association:

    Benchmarks for nutrition programs in child care settings. *Journal of American Dietetic*

    Association, 105(6), 979-986.

American Heart Association. (n.d.). *Overweight in children*. Retrieved July 10, 2008, from

    http://www.americanheart.org/presenter.jhtml?identifier=4670

Barlow, S. E., & the Expert Committee. (2007). Expert committee recommendations regarding

    the prevention, assessment, and treatment of child and adolescent overweight and

    obesity: Summary report. *Pediatrics*, *120*, S164-S192.

Bell, C. G., Walley, A. J., & Froguel, P. (2005). The genetics of human obesity. *Nature Reviews Genetics, 6*(3), 221-234.

Bellows, L., Anderson, J., Gould, S. M., & Auld, G. (2008). Formative research and strategic development of a physical activity component to a social marketing campaign for obesity prevention in preschoolers. *Journal of Community Health, 33*(3), 169-178.

Birch, L. L., Fisher, J. O., Grimm-Thomas, K., Castro, C. N., Sawyer, R., & Johnson, S. L. (2001). Confirmatory factor analysis of the child feeding questionnaire: A measure of parental attitudes, beliefs and practices about child feeding and obesity proneness. *Appetite, 36*, 201-210.

Borzekowski, D. L., & Robinson, T. N. (2001). The 30-second effect an experiment revealing the impact of television commercials on food preferences of preschoolers. *Journal of the American Dietetic Association, 101*(1), 42-46.

Bowman, S. A., Gortmaker, S. L., Ebbeling, C. B., Pereira, M. A., & Ludwig, D. S. (2004). Effects of fast-food consumption on energy intake and diet quality among children in a national household survey. *Pediatrics, 113*(1), 112-118.

Briley, M. E., Jastrow, S., Vickers, J., & Roberts-Gray, C. (1999). Dietary intake at child-care centers and away: Are parents and care providers working as partners or at cross-purposes? *Journal of the American Dietetic Association, 99*(8), 950-954.

Carr, D. H., & Conklin, M. T. (2002). Training needs of child care center directors and staff involved in the Child and Adult Care Food Program. *Topics in Clinical Nutrition, 17*(5), 68-76.

Caskey, S. R., & Felker, D. W. (1971). Social stereotyping of female body image by elementary school age girls. *Research Quarterly, 42*, 251-255.

Centers for Disease Control and Prevention (CDC). National Center for Health Statistics

    (NCHS). National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S.

    Department of Health and Human Services, Centers for Disease Control and Prevention,

    1976-1980.

CDC. NCHS. National Health and Nutrition Examination Survey Data. Hyattsville, MD: U.S.

    Department of Health and Human Services, Centers for Disease Control and Prevention,

    2003-2004.

CDC. (2007, May 22). *Overweight and obesity: Causes and consequences: Health*

    consequences. Retrieved June 27, 2008, from

    http://www.cdc.gov/nccdphp/dnpa/obesity/consequences.htm

CDC. (2007, May 22). *Overweight and obesity: Childhood overweight and obesity:*

    Consequences. Retrieved June 24, 2008, from

    http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/consequences.htm

CDC. (2007, May 22). *Overweight and obesity: Childhood overweight and obesity:*

    Contributing factors. Retrieved June 28, 2008, from

    http://www.cdc.gov/nccdphp/dnpa/obesity/childhood/contributing_factors.htm

Committee on Prevention of Obesity in Children and Youth. (2005). *Preventing childhood*

    obesity-health in the balance. Washington, DC: The National Academies Press.

Daniels, L. A., Fanco, B., & McWhinnie, J.-A. (2003). An assessment of the potential of

    family day care as a nutrition promotion setting in South Australia. *Nutrition &*

    Dietetics, *60*(1), 30-37.

Dietz, W. (1998). Health consequences of obesity in youth: Childhood predictors of adult disease.

    Pediatrics, 101, 518-525.

Dillman, D. A. (2000). *Mail and Internet surveys: The Tailored Design Method* (2nd ed.). New York: John Wiley & Sons.

Drake, P., Greenspoon, B., Unti, L., Fawcett, L., & Neville-Morgan, S. (2006). Family, friend, and neighbor child caregivers: Results of a statewide study to determine needs and desires for support. *Early Childhood Education Journal, 33*(4), 239-244.

Drennan, J. (2003). Cognitive interviewing: Verbal data in the design and pretesting of questionnaires. *Journal of Advanced Nursing, 42*(1), 57-63.

Dwyer, J., Needham, L., Simpson, J. R., & Heeney, E. S. (2008). Parents report intrapersonal, interpersonal, and environmental barriers to supporting healthy eating and physical activity among their preschoolers. *Applied Physiology, Nutrition, and Metabolism, 33*(2), 338-346.

Elicker, J., Noppe, I. C., Noppe, L. D., & Fortner-Wood, C. (1997). The parent-caregiver relationship scale: Rounding out the relationship system in infant child care. *Early Education and Development, 8*(1), 83-100.

Fagot-Campagna, A., Narayan, K. M. V., & Imperatore, G. (2001). Type 2 diabetes in children: Exemplifies the growing problem of chronic diseases [Editorial]. *British Medical Journal, 322*, 377-378.

Fisher, J. O. (2007). Effects of age on children's intake of large and self-selected food portions. *Obesity*, *15*, 403-412.

Fisher, J. O., Arreola, A., Birch, L. L., & Rolls, B. J. (2007). Portion size effects on daily energy intake in low-income Hispanic and African American children and their mothers. *American Journal of Clinical Nutrition, 86*(6), 1709-1716.

Fisher, J. O., Liu, Y., Birch, L. L., & Rolls, B. J. (2007). Effects of portion size and energy
density on young children's intake at a meal. *American Journal of Clinical Nutrition*,
86(1), 174-179.

Fisher, J. O., Mitchell, D. C., Smiciklas-Wright, H., & Birch, L. L. (2002). Parental influences on
young girls' fruit and vegetable, micronutrient, and fat intakes. *Journal of the American
Dietetic Association, 102*(1), 58-64.

Fisher, J. O., Rolls, B. J., & Birch, L. L. (2003). Children's bite size and intake of an entrée are
greater with large portions than with age-appropriate or self-selected portions. *American
Journal of Clinical Nutrition, 77*(5), 1164-1170.

Fletcher, J., & Branen, L. (1994). Making mealtime a developmentally appropriate curriculum
activity for preschoolers. *Day Care and Early Education, 21*(3), 4-8.

Gable, S., Chang, Y., & Krull, J. L. (2007). Television watching and frequency of family meals
are predictive of overweight onset and persistence in a national sample of school-aged
children. *Journal of the American Dietetic Association, 107*(1), 53-61.

Hendy, H. M., & Raudenbush, B. (2000). Effectiveness of teacher modeling to encourage food
acceptance in preschool children. *Appetite, 34*(1), 61-76.

Hertzler, A. A., & Frary, R. B. (1999). Preschool children's food problems and food-related
caregiving techniques. *Journal of Consumer Studies & Home Economics*, *23*(3),
147-154.

Hesketh, K., Wake, M., & Waters, E. (2004). Body mass index and parent-reported self-esteem
in elementary school children: Evidence for a causal relationship. *International Journal
of Obesity and Related Metabolic Disorders, 28*(10), 1233-1237.

IdahoSTARS. (n.d.). Retrieved July 10, 2008, from http://www.idahostars.org/dnn/

Institute of Medicine. (2005). *Food marketing to children and youth: Threat or opportunity?*
Washington, DC: National Academies Press.

Iruka, I. U., & Carver, P. R. (2006). *Initial results from the 2005 NHES early childhood program participation survey (NCES 2006-075).* U.S. Department of Education. Washington, DC: National Center for Education Statistics.

Jago, R., Baranowski, T., Baranowski, J. C., Thompson, D., & Greaves, K. A. (2005). BMI from 3-6 y of age is predicted by TV viewing and physical activity, not diet. *International Journal of Obesity, 29*(6), 557-564.

Kaufman, P., & Lutz, S. M. (1997). Competing forces affect food prices for low-income households. *Food Review*, 8-12.

Lanigan, J., & Power, T. G. (2008). Obesity prevention and health promotion: How family life educators view their role. *Journal of Extension, 46*(6), 6FEA5.

Luder, E., Melnik, T. A., & DiMaio, M. (1998). Association of being overweight with greater asthma symptoms in inner city Black and Hispanic children. *The Journal of Pediatrics, 132*(4), 699-703.

Lumeng, J. C., Kaplan-Sanoff, M., Shuman, S., & Kannan, S. (2008). Head Start teachers' perceptions of children's eating behavior and weight status in the context of food scarcity. *Journal of Nutrition Education and Behavior, 40*(4), 237-243.

Mallory, G. B. Jr., Fiser, D. H., & Jackson, R. (1989). Sleep-associated breathing disorders in morbidly obese children and adolescents. *The Journal of pediatrics, 115*(6), 892-897.

Marcus, C. L., Curtis, S., Koerner, C. B., Joffe, A., Serwint, J. R., & Loughlin, G. M. (1996). Evaluation of pulmonary function and polysomnography in obese children and adolescents. *Pediatric Pulmonology, 21*(3), 176-183.

Marketing General Inc. (n.d.). *National Association for the Education of Young Children*.

      Retrieved March 5, 2009, from https://www.mgilists.com/datacards/NAEYC_263.pdf

McGrath, W. H. (2007). Ambivalent partners: Power, trust, and partnership in relationships

      between mothers and teachers in a full-time child care center. *Teachers College Record, 109*, 1401-1422.

Moore, H., Nelson, P., Marshall, J., Cooper, M., Zambas, H., Brewster, K., et al. (2005). Laying

      foundations for health: Food provision for under 5s in day care. *Appetite*, *44*(2),

      207-213.

Morland, K., Wing, S., Diez Roux, A., & Poole, C. (2002). Neighborhood characteristics

      associated with the location of food stores and food service places. *American Journal of Preventive Medicine, 22*(1), 23-9.

Must, A., & Strauss, R. S. (1999). Risks and consequences of childhood and adolescent obesity.

      International Journal of Obesity, 23(Suppl. 2), 2-11.

Nahikian-Nelms, M. (1997). Influential factors of caregiver behavior at mealtime: A study of 24

      child-care programs. *Journal of the American Dietetic Association, 97*(5), 505-509.

National Association for the Education of Young Children (NAEYC). (n.d.). *NAEYC academy for early childhood program accreditation: NAEYC early childhood program standards (Standard 2: Curriculum).* Retrieved September 25, 2008, from

      http://www.naeyc.org/academy/standards/standard2/

NAEYC. (n.d.). *NAEYC academy for early childhood program accreditation: NAEYC early childhood program standards (Standard 3: Teaching).* Retrieved September 25, 2008,

      from http://www.naeyc.org/academy/standards/standard3/

NAEYC. (n.d.). *NAEYC academy for early childhood program accreditation: NAEYC early childhood program standards (Standard 5: Health).* Retrieved September 25, 2008, from http://www.naeyc.org/academy/standards/standard5/

National Association of Child Care Resource and Referral Agencies. (n.d.). *Child care aware: State licensing information.* Retrieved November 9, 2008, from http://www.childcareaware.org/en/parent_information/licensing/

National Heart Lung and Blood Institute. (n.d.) *Clinical guidelines on the identification, evaluation, and treatment of overweight and obesity in adults*. Retrieved June 28, 2008, from http://www.nhlbi.nih.gov/guidelines/obesity/ob_home.htm

Needham, L., Dwyer, J. J., Randall-Simpson, J., & Heeney, E. S. (2007). Supporting healthy eating among preschoolers: Challenges for child care staff. *Canadian Journal of Dietetic Practice and Research, 68*(2), 107-110.

Nielsen, S. J., Siega-Riz, A. M., & Popkin, B. M. (2002). Trends in energy intake in U.S. between 1977 and 1996: Similar shifts seen across age groups. *Obesity Research, 10*, 370-378.

Perrin, E. M., Flower, K. B., Garrett, J., & Ammerman, A. S. (2005). Preventing and treating obesity: Pediatricians' self-efficacy, barriers, resources, and advocacy. *Ambulatory Pediatrics, 5*(3), 150-156.

Rodríguez, M. A., Winkleby, M. A., Ahn, D., Sundquist, J., & Kraemer, H. C. (2002). Identification of population subgroups of children and adolescents with high asthma prevalence: Findings from the Third National Health and Nutrition Examination Survey. *Archives of Pediatrics & Adolescent Medicine, 156*(3), 269-275.

SAS Institute Inc. (2001). SAS (Version 8.2) [Computer software]. Cary, NC: SAS Institute Inc.

Sallis, J. F., Nader, P. R., Rupp, J. W., Atkins, C. J., & Wilson, W. C. (1986). San Diego surveyed for heart-healthy foods and exercise facilities. *Public Health Reports, 101*(2), 216-219.

Serdula, M. K., Ivery, D., Coates, R. J., Freedman, D. S., Williamson, D. F., & Byers, T. (1993). Do obese children become obese adults? A review of the literature. *Preventive Medicine, 22*(2), 167-177.

Serrano, E., Gresock, E., Suttle, D., Keller, A., & McGarvey, E. (2006). Fit WIC: Attitudes, perceptions and practices of WIC staff toward addressing childhood overweight. *Journal of Nutrition Education and Behavior, 38*(3), 151-156.

Sherry, B., McDivitt, J., Birch, L. L., Cook, F. H., Sanders, S., Prish, J. L., et al. (2004). Attitudes, practices, and concerns about child feeding and child weight status among socioeconomically diverse white, Hispanic, and African-American mothers. *Journal of the American Dietetic Association, 104*(2), 215-221.

Sigman-Grant, M., Christiansen, E., Branen, L., Fletcher, J., & Johnson, S. L. (2008). About feeding children: Mealtimes in child-care centers in four western states. *Journal of the American Dietetic Association, 108*(2), 340-346.

Skinner, J., Carruth, B. R., Moran, J. III., Houck, K., Schmidhammer, J., Reed, A., et al. (1998). Toddlers' food preferences: Concordance with family members' preferences. *Journal of Nutrition Education, 30*(1), 17-22.

Story, M., Kaphingst, K. M., Robinson-O'Brien, R., & Glanz, K. (2008). Creating healthy food and eating environments: Policy and environmental approaches. *Annual Review of Public Health, 29*, 253-272.

Story, M. T., Neumark-Stzainer, D. R., Sherwood, N. E., Holt, K., Sofka, D., Trowbridge, F. L., et al. (2002). Management of child and adolescent obesity: Attitudes, barriers, skills, and training needs among health care professionals. *Pediatrics, 110*(1), 210-214.

United States (US) Department of Agriculture, Food and Nutrition Service. (n.d.). *Child nutrition programs*. Retrieved September 18, 2009, from http://www.fns.usda.gov/cnd/Contacts/StateDirectory.htm

US Department of Agriculture. (2008, January 1). *Child and Adult Care Food Program: Regulations*. Retrieved September 10, 2008, from http://www.fns.usda.gov/cnd/Care/Regs-Policy/policymemo/CFR226-2008.pdf

Wang, Y., & Beydoun, M. A. (2007). The obesity epidemic in the United States—gender, age, socioeconomic, racial/ethnic, and geographic characteristics: A systematic review and meta-regression analysis. *Epidemiologic Reviews, 29*, 6-28.

Wang, Y. C., Bleich, S. N., & Gortmaker, S. L. (2008). Increasing caloric contribution from sugar-sweetened beverages and 100% fruit juices among US children and adolescents, 1988-2004. *Pediatrics, 121*(6), e1604-1614.

Washington STARS. (n.d.). Retrieved May 29, 2009, from http://www.waeyc.org/STARS.htm

Welsh, J. A., Cogswell, M. E., Rogers, S., Rockett, H., Mei, Z., & Grummer-Strawn, L. M. (2005). Overweight among low-income preschool children associated with the consumption of sweet drinks: Missouri, 1999-2002. *Pediatrics*, *115*(2), e223-e229.

Wood, D., Shultz, J. A., Johnson, S. L., Branen, L. J., Fletcher, J., & Ramsay, S. (2009). *What parents want to know and what providers want to share with parents about young children's healthful eating in childcare settings.* Manuscript in preparation.

Table 1. Respondent Characteristics

	Percentage (Frequency)
Gender:	
Male	1 (3)
Female	98 (267)
Missing	< 1 (1)
Age (years):	
20 – 29	8 (23)
30 – 39	14 (39)
40 – 49	21 (56)
50 – 59	41 (111)
60+	13 (35)
Missing	3 (7)
Ethnicity[1]:	
Non-Hispanic White or Caucasian	82 (222)
Black or African American	7 (20)
Hispanic or Latino	4 (10)
Asian or Asian American	3 (9)
American Indian or Alaska Native	1 (4)
Native Hawaiian or Pacific Islander	< 1 (2)
Other	2 (5)
Missing	1 (4)

Table 1. continued

	Percentage (Frequency)
<u>Highest education level:</u>	
High school or GED	< 1 (1)
Child Development Associate	5 (14)
Some College credits	11 (31)
Associate Degree	15 (42)
BA or BS	36 (97)
Graduate Degree	32 (86)
<u>BMI[2]:</u>	
Underweight < 18.5	3 (7)
Normal 18.5 – 24.9	44 (120)
Overweight 25.0 – 29.9	30 (81)
Obese ≥ 30.0	19 (51)

[1] Respondents could circle more than one response.
[2] Missing = 12

Table 2. Selected Characteristics of Respondents' Employment in Early Childhood Programs

<div align="right">Percentage (Frequency)</div>

Job title[1]:

Head Teacher	46 (126)
Teacher	35 (94)
Director or Site Supervisor	21 (58)
Assistant Teacher	7 (19)
Owner	6 (17)
Assistant Director	3 (9)
Cook	3 (8)
Education Director	2 (6)
Other	14 (37)

Years of work experience (years):

≤ 5	7 (19)
6 – 10	23 (63)
11 – 15	18 (49)
16 – 20	21 (56)
21 – 25	12 (33)
26 – 30	10 (27)
31 – 35	5 (14)
≥ 36	3 (9)
Missing	< 1 (1)

Table 2. continued

Age group of children with which respondents work[1]:

Preschoolers (3 to 5 years)	94 (254)
Toddlers (13 to 35 months)	27 (72)
Infants (less than 13 months)	11 (30)
Missing	< 1 (1)

Involvement with children at mealtimes:

I sit with the children	83 (224)
I am in the room but don't sit or eat with the children	7 (20)
I am not in the room with the children during mealtime	6 (17)
Other	3 (8)
Missing	< 1 (2)

---

[1] Respondents could circle more than one response.

Table 3. Selected Site Characteristics

	Percentage (Frequency)
Number of children enrolled:	
Under 25	18 (50)
26 to 50	22 (59)
51 to 75	15 (42)
Over 75	44 (118)
Missing	< 1 (2)
Food service style[1]:	
Family style	42 (113)
Lunch boxes from home	31 (83)
Pre-plated meals	18 (48)
Partial lunch boxes/partial program food	17 (47)
Buffet line	5 (13)
Other	11 (31)
Participation in the Child and Adult Care Food Program:	
Yes	24 (65)
No	58 (158)
Don't know	17 (46)
Missing	< 1 (2)

Table 3. continued

Availability of training equipment[1]:

	Percentage (Frequency)
Computer	87 (236)
Photocopier	87 (235)
DVD or videocassette recorder and television monitor	84 (228)
Computer printer	81 (219)
Internet access	80 (217)
Overhead projector	36 (97)
Computer projector	28 (77)
Other	5 (14)
None of the above	1 (4)
Missing	1 (4)

---

[1] Respondents could circle more than one response.

Table 4. Nutrition Support Activities Offered by Programs and Staff

Sources on nutrition or feeding children offered to parents by respondent's program[1]:	Percentage (Frequency)
Written information, such as pamphlets or brochures	60 (162)
Parent newsletter	52 (141)
Staff referral to a healthcare provider outside the program	26 (71)
Parent library	24 (64)
Class or classes for parents	17 (47)
Websites from other sources	17 (45)
Consultation for parents with a healthcare provider staffed at the program	16 (43)
Website developed by the program	4 (12)
Other	11 (29)
No information for parents is currently offered at my program	18 (50)
Missing	2 (5)

Ways staff has provided parents with nutrition or feeding information[1]:	
I talk with parents	60 (162)
I provide written information to parents (such as books or brochures)	58 (156)
I refer parents to other experts in children's nutritional needs (such as a dietitian, pediatrician)	36 (97)
I refer parents to a website(s) for nutrition information for young children	18 (50)
Other	16 (43)
I do not provide parents with information about nutrition	18 (48)
Missing	< 1 (2)

---

[1] Respondents could circle more than one response.

Table 5. Respondents' Desired Topics for Training and Preferred Methods of Training

<u>Percentage (Frequency)</u>

<u>Desired topics for training</u>[1]:

	Percentage (Frequency)
Physical activity and active play	64 (173)
Involving children in food related activities	63 (170)
Introducing children to new foods	62 (167)
Offering healthy foods and snacks	59 (159)
Addressing eating issues	58 (156)
Using food and nutrition guidelines for young children 2 to 5 years of age	56 (152)
Making mealtimes a positive experience for children at the program	48 (131)
Weight issues with young children	47 (128)
Using the program mealtime for teaching healthy eating to young children	47 (127)
Modeling healthful eating to children during meals and snacks	44 (119)
Other	10 (26)
Missing	< 1 (2)

Table 5. continued

	Percentage (Frequency)
Preferred methods of training[1]:	
Group training (at your program)	71 (193)
Group training (away from your program)	44 (119)
Individual instruction on the computer (web-based, DVD)	35 (96)
Individual instruction with video and handouts	27 (74)
Webinars	14 (38)
One-on-one (at your program)	10 (26)
Other	5 (13)
Missing	< 1 (2)

[1] Respondents could circle more than one response.

Table 6. Perceived Usefulness to Program Staff of Training Topics

	Percentage (Frequency)		
	Very useful	Somewhat useful	Not at all useful
Topics[1]:			
When and how to refer parents to resources about child feeding and nutrition	66 (179)	29 (78)	4 (11)
Handling parent communication about child feeding with tact and sensitivity	62 (168)	32 (86)	5 (14)
Knowing when an eating problem requires a provider-parent conference	56 (151)	37 (101)	6 (16)

_____

[1] Missing = 1% (3)

Table 7. Likelihood that Early Childhood Program Staff Would Use Nutrition Materials with

Parents

	Percentage (Frequency)			
	Very likely	Somewhat likely	Not at all likely	Missing
Nutrition materials:				
Guidelines for healthy eating for young children	80 (216)	18 (50)	1 (3)	< 1 (2)
Recipes (from your program) that children like	72 (194)	22 (60)	5 (13)	1 (4)
Guidelines for handling picky eaters	68 (184)	28 (77)	3 (7)	1 (3)
Ideas for addressing overweight in young children	48 (129)	42 (113)	9 (25)	1 (4)
Tips for cooking at home	42 (114)	39 (105)	17 (47)	2 (5)
Tips for food shopping	38 (103)	43 (116)	17 (47)	2 (5)

Table 8. Likelihood that Early Childhood Program Staff Would Use Tips or Guidelines for

Communicating with Parents

	Percentage (Frequency)			
	Very likely	Somewhat likely	Not at all likely	Missing
Tips or guidelines:				
Program routines related to mealtimes	65 (177)	28 (75)	4 (12)	3 (7)
Nutritional quality of the program's food	61 (165)	28 (77)	8 (21)	3 (8)
What foods their child is eating at the program	56 (151)	35 (96)	7 (18)	2 (6)
How much their child eats at the program	46 (125)	44 (118)	8 (23)	2 (5)
Their child's picky eating	46 (124)	44 (118)	8 (23)	2 (6)
Their child's weight	35 (95)	44 (118)	18 (49)	3 (9)

Table 9. Principal Components Factor Analysis: Likelihood that Staff Would Use Nutrition

Materials with Parents

<u>"Food, nutrition, and weight guidelines with parents"</u>

[1] 0.88   Tips for cooking at home

0.88   Tips for food shopping

0.83   Ideas for addressing overweight in young children

0.76   Guidelines for handling picky eaters

0.71   Guidelines for healthy eating for young children

0.55   Recipes (from your program) that children like

Variance Accounted for: 60%

---

[1] Factor loadings

Table 10. Principal Components Factor Analysis: Likelihood that Staff Would Use Tips or

Guidelines for Communicating with Parents

<u>"Parent communication guidelines for nutrition, eating, and weight"</u>

[1]0.85 How much their child eats at the program

0.79 What foods their child is eating at the program

0.77 Program routines related to mealtimes

0.76 Their child's weight

0.75 Nutritional quality of the program's food

0.73 Their child's picky eating

Variance Accounted for: 60%

---

[1] Factor loadings

Table 11. Respondents' Agreement or Disagreement That It Is a Teacher's Job to Communicate with Parents about Their Child's Eating, Nutrition, and Body Weight

	Percentage (Frequency)				
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Miss[1]
It is the childcare teacher's job to communicate with parents:					
If their child refused to eat that day at the program	73 (198)	20 (53)	3 (9)	2 (6)	2 (5)
Healthful eating in general for young children	62 (168)	28 (77)	6 (17)	1 (3)	2 (6)
If their child tried a new food that day at the program	60 (163)	32 (86)	5 (14)	1 (3)	2 (5)
About what their child ate that day at the program	53 (143)	38 (103)	6 (16)	1 (4)	2 (5)
If staff has concerns about *how much* their child eats at the program	51 (137)	39 (106)	6 (16)	1 (4)	3 (8)
If staff has concerns about *what* their child eats at the program	45 (122)	44 (119)	7 (20)	1 (3)	3 (7)
If staff has concerns that their child is underweight	38 (104)	35 (95)	19 (52)	6 (15)	2 (5)
If staff has concerns that their child is overweight or obese	38 (103)	34 (92)	20 (53)	6 (16)	3 (7)

[1] Miss = Missing

Table 12. Early Childhood Program Staff Level of Comfort Communicating with Parents about

Their Child's Eating, Nutrition, and Body Weight

I would feel comfortable taking to parents:	Percentage (Frequency)			
	Very	Somewhat	Not at all	Missing
If their child refused to eat that day at the program	89 (241)	9 (24)	1 (3)	1 (3)
If their child tried a new food that day at the program	88 (239)	9 (24)	2 (5)	1 (3)
About what their child ate that day at the program	85 (229)	13 (34)	1 (4)	1 (4)
About healthful eating in general for young children	75 (202)	23 (61)	2 (6)	< 1 (2)
If I have concerns about *how much* their child eats at the program	55 (148)	39 (106)	5 (14)	1 (3)
If I have concerns about *what* their child eats at the program	54 (147)	39 (105)	5 (14)	2 (5)
If I have concerns that their child is underweight	36 (98)	47 (128)	15 (42)	1 (3)
If I have concerns that their child is overweight or obese	30 (81)	49 (134)	20 (53)	1 (3)

Table 13. Principal Components Factor Analysis: Staff Agreement or Disagreement That It Is a Teacher's Job to Communicate with Parents About Their Child's Eating, Nutrition, and Body Weight

"Communicating concerns about weight and eating"		"Communicating about the child's daily eating"	
[1]0.92	If staff has concerns that their child is underweight	0.85	About what their child ate that day at the program
0.91	If staff has concerns that their child is overweight or obese	0.80	If their child tried a new food that day at the program
0.69	If staff has concerns about *what* their child eats at the program	0.71	If their child refused to eat that day at the program
0.67	If staff has concerns about *how much* their child eats at the program	0.61	Healthful eating in general for young children

Variance Accounted for:

36%	32%

[1] Factor loadings

Table 14. Principal Components Factor Analysis: Staff Level of Comfort Communicating with

Parents About Their Child's Eating, Nutrition, and Body Weight

"Comfortable communicating about concerns regarding weight and eating"		"Comfortable communicating about daily eating"	
[1]0.93	If I have concerns that their child is underweight	0.84	If their child tried a new food that day at the program
0.91	If I have concerns that their child is overweight or obese	0.84	About what their child ate that day at the program
0.73	If I have concerns about *what* their child eats at the program	0.77	If their child refused to eat that day at the program
0.66	If I have concerns about *how much* their child eats at the program		
0.48	About healthful eating in general for young children		

Variance Accounted for:

              37%   31%

---

[1] Factor loadings

Table 15. Feelings about Approaching Parents to Talk about Their Child Being Overweight

| | Percentage (Frequency) | | | | |
	Strongly Agree	Somewhat Agree	Somewhat Disagree	Strongly Disagree	Miss[1]
I would feel:					
Worried that parents will take offense	39 (106)	43 (116)	8 (23)	6 (15)	4 (11)
Hesitant when parents have different cultural beliefs	32 (88)	47 (127)	9 (25)	8 (21)	4 (10)
Worried that parents will deny there's a problem	29 (78)	49 (134)	14 (38)	3 (9)	4 (12)
Uncomfortable	28 (76)	42 (113)	15 (42)	11 (30)	4 (10)
Concerned that I am interfering	23 (63)	46 (124)	14 (39)	12 (32)	5 (13)
Willing to take action	21 (58)	51 (138)	17 (47)	7 (18)	4 (10)
Unprepared because I lack training	19 (51)	32 (88)	27 (74)	18 (49)	3 (9)
Confident, because I am qualified	17 (46)	34 (92)	31 (85)	13 (35)	5 (13)
Responsible for taking action	16 (43)	47 (127)	23 (61)	11 (29)	4 (11)

[1] Miss = Missing

Table 16. Situations Related to Likelihood of Staff Talking to a Parent about Their Child Being

Overweight

	Percentage (Frequency)			
I would talk to a parent about his/her <u>child being overweight…</u>	<u>Very likely</u>	<u>Somewhat likely</u>	<u>Not at all likely</u>	<u>Missing</u>
If the parent brought up the subject first	82 (221)	12 (34)	4 (11)	2 (5)
If an overweight child had a health condition	74 (201)	22 (59)	2 (5)	2 (6)
If I had a good relationship with the parent	68 (184)	26 (70)	5 (14)	1 (3)
If my program had policies to support my action	63 (170)	28 (77)	6 (15)	3 (9)
If I had guidelines/tips on how to talk with the parent about their child being overweight	62 (169)	28 (77)	6 (15)	4 (10)
If I had specific training	61 (166)	31 (85)	4 (10)	4 (10)
If I had my supervisor's support	53 (145)	32 (86)	9 (25)	6 (15)
If other staff members at my program were willing to do it, too	49 (132)	32 (86)	14 (38)	5 (15)
If I had effective strategies for keeping young children at a healthy weight	46 (126)	42 (113)	10 (26)	2 (6)

Table 17. Principal Components Factor Analysis: Feelings about Approaching Parents to Talk about Their Child Being Overweight

"Feeling worried and hesitant about parents' reactions"		"Feeling responsible, willing, and confident"	
[1]0.87	Worried that parents will take offense	0.87	Responsible for taking action
0.76	Hesitant when parents have different cultural beliefs	0.87	Willing to take action
0.71	Uncomfortable	0.74	Confident, because I am qualified
0.71	Worried that parents will deny there's a problem		
0.69	Concerned that I am interfering		
0.53	Unprepared because I lack training		

Variance Accounted for:

	35%	28%

---
[1] Factor loadings

Table 18. Principal Components Factor Analysis: Situations Related to Likelihood of Staff

Talking to a Parent about Their Child Being Overweight

"Likely to talk if have multiple program supports"

[1]0.86   If I had guidelines/tips on how to talk with the parent about their child being overweight

0.86   If my program had policies to support my action

0.84   If I had a good relationship with the parent

0.82   If I had specific training

0.82   If I had my supervisor's support

0.79   If I had effective strategies for keeping young children at a healthy weight

0.75   If other staff members at my program were willing to do it, too

0.74   If an overweight child had a health condition

Variance Accounted for: 61%

---

[1] Factor loadings

APPENDIX

Appendix A: Questionnaire

For the first questions, think about the interactions you have or could have with parents related to their child's eating and nutrition.

Q1. **Please tell us how much you agree that it is part of a childcare teacher's job to communicate with parents about their child's eating, nutrition, and body weight.** *(Circle one answer for each.)*

I believe it is a childcare teacher's <u>job</u> to communicate with parents...	Strongly Disagree ▼	Somewhat Disagree ▼	Somewhat Agree ▼	Strongly Agree ▼
About what their child ate that day at the program	1	2	3	4
If their child tried a new food that day at the program	1	2	3	4
If their child refused to eat that day at the program	1	2	3	4
If staff has concerns about *how much* their child eats at the program	1	2	3	4
If staff has concerns about *what* their child eats at the program ..	1	2	3	4
Healthful eating in general for young children	1	2	3	4
If staff has concerns that their child is underweight	1	2	3	4
If staff has concerns that their child is overweight or obese	1	2	3	4

Q2. **How likely would you be to use the following nutrition materials with parents?** *(Circle one answer for each.)*

Likely to Use with Parents:	Not at all ▼	Somewhat ▼	Very ▼
Recipes (from your program) that children like	1	2	3
Guidelines for healthy eating for young children	1	2	3
Tips for food shopping	1	2	3
Tips for cooking at home	1	2	3
Ideas for addressing *over*weight in young children	1	2	3
Guidelines for handling picky eaters	1	2	3

Q3. **We are developing resources about healthy eating for early childhood educators. Which of the following items would you use to communicate with parents?** *(Circle one answer for each.)*

	Yes ▼	No ▼
About *their own child's* eating:		
Written report provided every day...1		2
Written report at the request of the parent...1		2
About children's eating *in general*:		
Parent newsletter...1		2
Program website for parents...1		2
Program policies written for parents that explain mealtimes and feeding children 1		2

Q4. **How <u>comfortable</u> would you feel communicating with parents about their child's eating, nutrition, and body weight?** *(Circle one answer for each.)*

I would feel <u>comfortable</u> talking to parents...	Not at all ▼	Somewhat ▼	Very ▼
About what their child ate that day at the program 1	2	3
If their child tried a new food that day at the program 1	2	3
If their child refused to eat that day at the program......................1	2	3
If I have concerns about *how much* their child eats at the program 1	2	3
If I have concerns about *what* their child eats at the program 1	2	3
About healthful eating in general for young children.....................1	2	3
If I have concerns that their child is underweight..........................1	2	3
If I have concerns that their child is overweight or obese 1	2	3

Q5. **How useful would staff at your program find the following training topics?** *(Circle one answer for each.)*

Training topics:	Not at all useful ▼	Somewhat useful ▼	Very useful ▼
Knowing when an eating problem requires a provider-parent conference...1	2	3
Handling parent communication about child feeding with tact and sensitivity...1	2	3
When and how to refer parents to resources about child feeding and nutrition...1	2	3

Q6. **How likely would you be to use materials that offer the following tips or guidelines for communicating with parents?** *(Circle one answer for each.)*

	Not at all likely ▼	Somewhat likely ▼	Very likely ▼
What foods their child is eating at the program..............................	1	2	3
How much their child eats at the program	1	2	3
Their child's weight	1	2	3
Nutritional quality of the program's food..	1	2	3
Program routines related to mealtimes	1	2	3
Their child's picky eating	1	2	3

Please tell us about young children and issues with being overweight.

Q7. **How often do you talk with parents about a child being overweight?**

1. Daily
2. Weekly
3. Monthly
4. Less than monthly
5. Never

Q8. **How would you feel about approaching parents to talk about their child being overweight?** *(Circle one answer for each.)*

I would feel:	Strongly Disagree ▼	Somewhat Disagree ▼	Somewhat Agree ▼	Strongly Agree ▼
Responsible for taking action	1	2	3	4
Willing to take action...	1	2	3	4
Uncomfortable	1	2	3	4
Worried that parents will deny there's a problem	1	2	3	4
Confident, because I am qualified	1	2	3	4
Concerned that I am interfering	1	2	3	4
Worried that parents will take offense	1	2	3	4
Unprepared because I lack training	1	2	3	4
Hesitant when parents have different cultural beliefs.........	1	2	3	4

Q9. **How likely would it be for you to talk to a parent about his or her child being overweight?** *(Circle one answer for each.)*

I would talk to a parent about his/her child being overweight...	Not at all likely ▼	Somewhat likely ▼	Very likely ▼
If I had effective strategies for keeping young children at a healthy weight	1	2	3
If I had my supervisor's support	1	2	3
If I had a good relationship with the parent	1	2	3
If I had guidelines/tips on how to talk with the parent about their child being overweight	1	2	3
If my program had policies to support my action	1	2	3
If other staff members at my program were willing to do it, too	1	2	3
If the parent brought up the subject first	1	2	3
If an overweight child had a health condition	1	2	3
If I had specific training	1	2	3

Q10. **If a teacher has concerns that a child at the program is overweight or obese, how do you think she or he should respond?** *(Circle ALL that apply.)*

1. Talk to the parent
2. Talk to the program Director
3. Take no action
4. Other (please specify): _____

Q11. **"If childcare staff at the program have concerns that a child is overweight or obese, it is the responsibility of the program to communicate with parents about it." How much do you agree or disagree with this statement?**

1. Strongly Disagree
2. Somewhat Disagree
3. Somewhat Agree
4. Strongly Agree

Now we'd like to ask some information about your program.

Q12. What is the total number of children currently enrolled at your childcare program site?

1. Under 25
2. 26 to 50
3. 51 to 75
4. Over 75

Q13. What is the food service style at your site? *(Circle ALL that apply.)*

1. Buffet line
2. Pre-plated meals
3. Family style (children serve themselves from pitchers and bowls)
4. Lunch boxes from home
5. Partial lunch boxes/partial program food

Q14. Which of these statements best describes where *you* usually are at mealtime at your childcare site?

1. I sit with the children
2. I am in the room but don't sit or eat with the children
3. I am not in the room with the children during mealtime
4. Other (Please specify): _____

Q15. Does your program participate in the Child and Adult Care Food Program (Child Care Food Program)?

1. Yes
2. No
3. Don't know

Q16. **What training equipment is available to you at your program?** *(Circle ALL that apply.)*

1. Computer
2. DVD or videocassette recorder (VCR) and television monitor
3. Overhead projector
4. Computer projector
5. Internet access
6. Computer printer
7. Photocopier
8. Other (please specify): _____
9. None of the above

Q17. **Which of the following sources on nutrition or feeding children does your program currently offer parents?** *(Circle ALL that apply to your program.)*

1. Class or classes for parents
2. Consultation for parents with a healthcare provider staffed at the program
3. Staff referral to a healthcare provider outside the program
4. Written information, such as pamphlets or brochures
5. Website developed by the program
6. Websites from other sources
7. Parent newsletter
8. Parent library
9. Other (please specify): _____
10. No information for parents is currently offered at my program

Q18. **In what ways, if any, have you provided parents at your program with information about children's nutrition or feeding?** *(Circle ALL that apply.)*

1. I talk with parents
2. I provide written information to parents (such as books or brochures)
3. I refer parents to other experts in children's nutritional needs (such as a dietitian, pediatrician)
4. I refer parents to a website(s) for nutrition information for young children
5. Other (please specify): _____
6. I do not provide parents with information about nutrition

Next, we'd like to know more about your interests related to children's nutrition.

Q19. Would you like ideas or training about any of the following topics? *(Circle ALL that apply.)*

1. Using the program mealtime for teaching healthy eating to young children
2. Introducing children to new foods
3. Addressing eating issues
4. Weight issues with young children
5. Making mealtimes a positive experience for children at the program
6. Modeling healthful eating to children during meals and snacks
7. Using food and nutrition guidelines for young children 2 to 5 years of age
8. Involving children in food related activities
9. Offering healthy foods and snacks
10. Physical activity and active play
11. Other (please specify): _____

Q20. If you were offered training in nutrition and healthy eating for young children, in what ways would you prefer this training? *(Circle ALL that apply.)*

1. One-on-one (at your program)
2. Group training (at your program)
3. Group training (away from your program)
4. Individual instruction on the computer (web-based, DVD)
5. Individual instruction with video and handouts
6. Webinars
7. Other (please specify): _____

Q21. Which nutrition resources have you used for your current childcare position? *(Circle ALL that apply.)*

1. Books (including textbooks)
2. MyPyramid materials
3. 5-A-Day materials
4. Sesame Street Nutrition Curriculum
5. Other
6. I have not used nutrition resources

Finally, we'd like to ask some information about you to help us interpret results.

Q22. What is your age?

_____ years old

Q23. What is your gender?

1. Male
2. Female

Q24. What education have you completed? *(Circle ALL that apply.)*

1. Grade School
2. Some high school or working towards GED
3. High school or GED
4. Child Development Associate – CDA
5. Some College credits
6. Associate Degree
7. BA or BS
8. Graduate degree

Q25. How tall are you? *(To the nearest inch. If you do not know, please give us your best answer)*

_____ Feet _____ Inches

Q26.   How much do you weigh? *(If you do not know, please give us your best answer)*

_____ Pounds

Q27. With which of the following ethnic groups do you consider yourself a member? *(Circle ALL that apply.)*

1. American Indian or Alaska Native
2. Native Hawaiian or Pacific Islander
3. Asian or Asian American
4. Black or African American
5. Hispanic or Latino
6. Non-Hispanic White or Caucasian
7. Other (please specify): _____

Q28. Have you received training in any of the following areas? *(Circle one answer for each.)*

	Yes ▼	No ▼
Training about child development or early childhood education	1	2
Training about nutrition	1	2
Training about feeding children	1	2
Training about childhood overweight	1	2
Training about physical activity and active play	1	2

Q29. How many years of work experience do you have in early childhood programs (to the nearest year)?

_____ year(s)

Q30. What is your job title? *(Circle ALL that apply.)*

1. Head Teacher
2. Teacher
3. Assistant Teacher
4. Director or Site Supervisor
5. Owner
6. Education Director
7. Assistant Director
8. Cook
9. Other (please specify): _____

Q31. What is the age of children you currently work with? *(Circle ALL that apply.)*

1. Infants (less than 13 months)
2. Toddlers (13 to 35 months)
3. Preschoolers (3 to 5 years)

Appendix B: Cognitive Pre-test Interview Results

First, about how long did it take you to fill out the questionnaire?   _____
> *R1: < 15 minutes*
> *R2: 10 – 15 minutes*
> *R3: 10 minutes*
> *R4: < 20 minutes*

Thank you. Let's look at the first page, at questions relating to your communication with parents.

1. What did you think about when you first read Q1?
> *R1: She and other staff talk with parents about child's eating, nutrition, and body weight, but they don't have much information to **give** to parents about those topics; she feels comfortable talking with parents*
> *R2: Thought it's hard to tell parents about their child's eating habits, she communicates with parents, and parents feel very comfortable with her [Note: she described her own experience of communicating with parents about their child's eating]*
> *R3: She thought the question is very straightforward*
> *R4: She thought that the question gave her a feel for what kind of questions (topics) will be asked in the entire questionnaire; the scale category was easy to find her ratings; it was nice to see that three topics (child's eating, nutrition, and body weight) went together and were asked in one question; she had a hard time scoring response choices #5 and #6; #5: what does the phrase "how their child eats" mean? Does it refer to manners, the amount to eat, skills to use (pouring, feeding, serving, eating)? #6: "healthful eating" and "nutrition" are bound together in the response choice #6—she only feels comfortable talking about healthful eating, but not about nutrition*

2. How do you interpret the term "overweight"?
> *R1: Off the scale; heavy; lack of energy*
> *R2: Fat*
> *R3: She knows the definition of overweight; she sees the terms overweight and obese used interchangeably in some papers, and she thinks it's very confusing [Note: she is an expert in caring for children]*
> *R4: Didn't have a problem with the term; she's familiar with the term; she uses her experience and general feeling to define the normal or overweight range [Note: she is an expert in early childhood]*

3. How about the term "obese"?
> *R1: Same as overweight*
> *R2: The terms obese and overweight have the same meaning; the term obese sounds better than the other; the term "obese" has been used a lot now*
> *R3: She feels that overweight and obese are similar; she saw studies that use the term overweight and obese interchangeably;*
> *R4: Extremely overweight; child with severe weight issues*

4. What did you think overall about the response choices to Q1?

 R1: Good.

 R2: She thought they were repetitious [Note: she thinks that the response choices are repetitious because of their sentence structure (same style)]

 R3: Very easy to read; response choices really capture possible eating and weight issues of children

 R4: Except #5 and #6, she didn't see anything inappropriate or uncomfortable [Note: she already mentioned about #5 and #6 above]

5. For Q2 and Q3, are there any changes you would make to the list of materials or items that we provided?

 R1: No

 R2: Q3, "written report provided every day": she doesn't use a written report as much as she communicates with parents verbally [Note: she is not suggesting any changes]

 R3: Q2: She didn't like the term "picky eaters"; she thinks that others don't have this issue, just her; she suggests revising to "guidelines for helping children eat a variety of foods" [Note: she suggests using a positive word to replace "picky eaters"]

 R4: Q3: She is not sure about the phrase "written report at the request of the parent"; it is less familiar to her than "written report provided every day"

6. For Q3: In your mind, what is the difference between a "written report provided every day" and a "written report at the request of the parent"?

 *R1: **"written report provided every day"**: something in your routine you do constantly; **"written report at the request …"**: something you do just for that day to give parents some information*

 *R2: **"written report provided every day"**: "I'll do it verbally" [Note: as mentioned previously, she is more likely to communicate with parents verbally than to use written reports on a daily basis] **"written report at the request …"**: a written report that I do for parents' requests*

 *R3: **"written report provided…"**: for infants—a report about their eating patterns (what and how much they are eating) For preschoolers—"overkill"; post what is served (menus); if a child isn't eating well, then report everyday **"written report at…"**: more depth on eating problems for parents*

 *R4: **"written report provided every day"**: what children eat and how much they eat each day **"written report at…"**: she thinks that this report is much more comprehensive and consists of very specific details for a child's overall eating behavior or habits in order to let parents know*

7. What did you think Q4 was asking you?

 R1: "If you saw the problem, would you be willing to talk to the parents about it?"

 R2: It's about the eating habits of the child and body weight; If a child is overweight, we have to keep an eye on that; If children eat a lot in school, then I'll talk to the parents [Note: she answered what she would do if she found a child with eating or weight issues]

 R3: "Comfort level of providers in talking with parents about these topics"

 R4: "what is my comfort level; what kind of things am I comfortable talking with parents about; what kind of things do you feel hesitant or unsure about talking with parents about; is there any hesitancy of any of those issues in my role as staff in an early childhood program"

8. Do you suggest any revisions to this question?

>*R1, R3: No*
>
>*R2: She doesn't have any problems.*
>
>*R4: Response choice #5 and #6—see note above for Q1*

9. For Q5, were there any training topics you thought should be there that were *not* in the list of responses?

>*R1, R3, R4: No*
>
>*R2: No, it's well written.*

10. For Q6, do the materials in the response list require any revisions?

>*R1: Don't think so*
>
>*R2: Not really—she doesn't think there is a need for any revision*
>
>*R3: No*
>
>*R4: No—these are very comprehensive; she cannot think of others*

11. What does the phrase, "program routines related to mealtimes" mean to you?

>*R1: "Guidelines for what to do with the children regarding food"*
>
>*R2: Menus that tell us what they eat (breakfast, lunch, and snack); amount of food children eat*
>
>*R3: Setting routines for children ("How are we feeding children as a group? Does the program offer sensitivity to individual children?"); health and safety ("what are the routines that staff are using during mealtimes? Are they following cross-contamination guidelines?")*
>
>*R4: "Do we serve family-style; do children serve themselves; are children required to have a bite of everything or a portion of something on a plate; do children make decisions of what they eat, special dietary routines (food allergy, personal request)?"*

Let's look at the next set of questions relating to overweight.

12. What did you think about the transition sentence we used after Q6 to lead into this section?

>*R1: Good—she didn't have any problems with it*
>
>*R2: "I'm just evaluating the issues with overweight children. I think it's a very good question." [Note: she seems not to answer the question I asked. I should have asked her this question in a different way.]*
>
>*R3: Not grammatically correct—"overweight" is an adjective, not a noun*
>
>*R4: Okay—the first section gets you in the rhythm, in the mood; changed smoothly from a broad to specific topic.*

13. Do you think we need to define "overweight" in this transition statement?

> *R1: Maybe—some people might have different views what overweight is*
>
> *R2: "No, I don't think so"*
>
> *R3: **Grammar issues**: the transition sentence uses overweight as a noun and Q7 uses it as an adjective; "people may think that these people aren't bright"; "unless you define that "overweight is used as a noun in this questionnaire," respondents may hang up" **Definition of overweight:** respondents don't need to know the definition to do this survey; no questions ask for a specific number of children who are overweight; "how would you define overweight?" [Note: she asked me how we could define it—it's difficult to define overweight]; if we define the term, it would muck-up the survey; we just have to think that respondents are going to move on; she doesn't think we need to define it*
>
> *R4: She didn't have any problems with the term "overweight"; others may define it a different way; we would want to define it; one of our projects used a picture to define it*

14. For Q7, when you read the phrase, "talk with a parent about his or her child's being overweight", what came to your mind?

> *R1: "I probably wouldn't talk to parents unless they have concerns"*
>
> *R2: Chose "less than monthly"; if she sees an overweight child, then she'll tell his/her parents not to eat much or eliminate some food; parents are very open about when their child is overweight*
>
> *R3: She doesn't typically talk to children's parents even if she sees a really heavy child; she will look at the physical report, what the doctor has said, child's eating habits, how much movement they have to determine if she talks about this issue with parents; it's not just weight, but a total package*
>
> *R4: Casual conversations that we sometimes have with parents at drop-offs, pick-ups, or during conferences; she thinks it means that all the opportunities that she may have to talk with parents about the issues*

15. Can you tell me how you reacted to Q8?

> *R1: "I probably wouldn't unless the parents came to me first"*
>
> *R2: Approaching parents to talk about their child's overweight is difficult at first; she doesn't have problems approaching parents; good question.*
>
> *R3: Question was fine; grammar issues again—"overweight" is used as a noun; response choices are good; they are a wide range of feelings that staff might have; two "Willing" responses have issues [Note: if she strongly agrees with the sentence, doesn't that mean that she would not feel willing, if she didn't have a good relationship? This is NOT true. Under any conditions, she would feel willing about approaching parents to talk about their child being overweight]; she would feel willing even she didn't have more training; it doesn't work for her; it's almost like she doesn't want to answer these two questions*
>
> *R4: Overall, the question is very straightforward and clear; two willing responses have issues; she would feel willing under any circumstances [Note: she said the same thing that R3 said]*

16. Is this an appropriate list for how providers would really feel?

> *R1: "I think so"*
> *R2: Yes*
> *R3: See note above [Note: she said a list is a wide range of feelings that staff might have]*
> *R4: She thinks that we got a wide range; the only thing she struggles with is the "willing" response choices as she said before*

17. Do you think the order of response choices might affect respondents' answer?

> *R1: No*
> *R2: No; it's a good question.*
> *R3:" It could," but she wouldn't have thought of it unless she was asked.*
> *R4: May not affect the answer; the order of response choices may help respondents walk through the question because the order is listed from "easy" to "more challenging"; good order*

18. For Q9, what do you think this question was asking?

> *R1: "If you felt the concern, would you be willing to approach the parent about it?"*
> *R2: "That's a hard one. Probably, if I have more training, I could have effective strategies for keeping children at a healthy weight, but I think it takes a lot to know what the weight should be… how tall they are… things like that" [Note: this is how she answered]*
> *R3: It is not comfort level or your feeling; what will you say to a parent under these circumstances?; would you talk to a parent under these circumstances?*
> *R4: The question sentence [How likely… or her child's overweight?] is very straightforward; she struggled with this question; she said she may interpret the response choices as "I'll do that, but **only** if I had..."; she'll be likely to talk to a parent about his/her child's overweight even without these things, so it was hard for her to scale "not at all likely," "somewhat likely," "very likely," [Note: she seems to feel the same things that she feels at Q8 ("willing, if I had…")]*

19. How easy or difficult was this question to answer?

> *R1: Not very hard*
> *R2: Very hard.*
> *R3: Not at all*
> *R4: See note above for Q9*

20. Do you suggest any revisions to this question?

> *R1, R3: No*
> *R2: Not really*
> *R4: She suggests revising the question to "What kind of things would you like to have that would help you facilitate your conversation about a child's weight?"*

21. Looking at Q10: Did you have any difficulty in coming up with your response to this question?

> *R1: No*
> *R2: No—she marked "other": I talk to parents after I consult a nurse*
> *R3: A little bit—she marked "other": I look at the medical record, and then I'll talk to the parents*
> *R4: She didn't have any difficulty*

22. Q11, and 12 present statements for your agreement or disagreement: What was your reaction to these two questions?

R1: She instantly felt one way or the other

R2: "I put "strongly agree" on both of them. I don't think there's an emphasis on overweight or obesity with young children at that age, it's better to find out at that early age than later on" [Note: Contradiction! She should mark "strongly disagree", judging from what I hear]

R3: For Q11, she had a more difficult time than Q12. She's really cautious about putting pressure on children at this age to focus on their weight. She doesn't want to make parents worry too much about children possibly being diabetic or overweight. No problems for Q12.

R4: Very comfortable with these questions—they are stated very clearly and straightforward; had no hesitation to answer.

23. Regarding Q12: What did you think about when you selected your response to Q12?

R1: Chose "strongly disagree"; "I don't think it's our responsibilities"; it's parents' and doctors' responsibilities to determine if the child is overweight or not; parents and doctors should take care of the situation

R2: "Strongly Agree": parents are sometimes ignorant and put it aside if the child is overweight because they might be overweight themselves; somebody should tell parents that their child is overweight or obese

R3: "Agree": she works as a team and obtains data (e.g., medical records) before talking to parents about the weight issues; when she read "if childcare staff," she thought it is really about working as a part of a team [Note: she means that childcare staff work as a team to communicate with parents about child's weight issues]

R4: The question means that "not about policy or program aspects, but as a professional, what kind of ethical responsibility?"

Let's look at questions Q13 through 17 that ask about your program.

24. Are there any revisions or changes that you would suggest for this section?

R1: No

R2: These are good questions! For Q17: We only have a "computer." [Note: she is not suggesting anything]

R3: Q15: She marked "other": an adult teacher sits with the children. [Note: she supervises other teachers, and someone always sit with the children]

R4: Q13 response choices: she thinks that stopping at 75 is low—she knows a center that has 300. [Note: she suggests that we may aim for a higher enrollment]

25. Any clarifications?

R1, R4: No

R2, R3: Don't think so.

26. Let's look at question Q18 briefly: How do you define the term "nutrition"? How about the term "feeding children"?

> R1: **Nutrition**: *well rounded; balanced diet; nutritious diet; meal* **Feeding children**: *responsibility to make sure that children eat healthy*
>
> R2: **Nutrition:** *eating proper food; not eating junk food* **Feeding children:** *feed children nutritious food; role model*
>
> R3: **Nutrition:** *nutritional value of food; food that fuels* **Feeding children:** *having food to fuel; providing food to children; social aspects of food; emotional aspects of food; how do we help a child develop a healthy relationship with food [Note: when she read the question, she thought of "nutrition or feeding children" as one topic, not as separate topics]*
>
> R4: **Nutrition:** *mechanics of food; vitamins, balanced diet; nutritional components meeting together for a meal* **Feeding children:** *practices or recommendations for feeding young children; whether in a group setting or not; what we have to offer; and mealtime interaction and relationship [Note: when she read the question, she thought of "nutrition or feeding children" as one topic, not as separate topics (she said the same thing as R3 said)]*

27. Do you think that any of the response choices for Q18 need to be revised?

> R1, R2, R3: No
>
> R4: She marked "other": books in the parent library (parent lending library or parent resource library)—common [Note: she said as far as we provide "other," it's not necessary to add "books" to the response choices]; she suggests adding "newsletter" to #4

28. When you read Q19, what did you think about, first?

> R1: Her program has rarely provided parents any kind of formal information; she thought it would be nice to have some more formal information to give parents
>
> R2: She has to provide information (for example: nutrition guide for children) to parents; she marked both "I talk with parents" and "I provide written information to parents"
>
> R3: She likes to talk with parents and reassure them; her attempts are to help parents relax and not get frenzied about feeding; once she and other staff feel a child has problems regarding nutrition or feeding, they immediately try to resolve them; remembered the years of experience that she had to help and talk with parents about their child's nutrition; nutrition is a very tender topic
>
> R4: She thought about a lot different things; thought about a "parent training piece we do" and about "connecting parents with resources"; thought the information about children's nutrition or feeding provided to parents as regular basis or needed basis (spontaneous) [Note: these are all what she said; I should have asked her more about "parent training piece" and "connecting parents with resources"]

29. Are there response choices to Q19 that weren't included that you think should be there?

> R1: No
>
> R2: No—all are good choices
>
> R3: "No, I don't think so"
>
> R4: She marked "other": books at a parent library

30. What did you think about the transition statement between Q19 and 20?
> *R1: Didn't think anything, necessarily*
> *R2: Didn't have any problems*
> *R3: Fine*
> *R4: Great*

We're nearing the end: let's move on to Q20, 21 and 22, which are about you and your interests in children's nutrition.

31. Did Q20, 21, and 22 seem clear?
> *R1, R2, R3: Yes*
> *R4: Q22: textbook—does this include both a book written as a textbook specifically and a book written on family nutrition (a book written more casually)?*

32. Are there any changes you would suggest for these questions?
> *R1, R2, R4: No*
> *R3: Don't think so*

33. Are there any changes to response choices for these questions that you would suggest?
> *R1, R2, R3: No*
> *R4: See note above about Q22*

34. For Q20, response choice #3: When you read the term "eating issues", what did you think about?
> *R1: Picky eating; eating too much or little*
> *R2: Overeating; children who are overweight; children who don't want to eat*
> *R3: Parental pressure—parents who make children eat or restrict their children' eating (Example of restriction: "you are eating too much")*
> *R4: Picky eating; non-eaters; underweight children who are eating little; overweight children who are eating a lot*

For the last section, which includes personal background, we'd like to ask the following:

35. Are there any questions you feel need changing?
> *R1, R3: No*
> *R2: Not really*
> *R4: Q30: She wasn't sure how to answer—does this question ask for the exact year and month or an approximation rounded up to the year?*

36. Are there any questions that you feel are missing that would help us understand teachers and childcare providers?

    R1: "How long have you worked (years of experience)" [Note: We already have this question, Q30]
    R2: Don't think so
    R3: No, she thinks that this survey is very easy to do
    R4: No

Lastly, I would like to ask your impressions of the entire questionnaire.

37. How did you feel about the length of the questionnaire?

    R1: Good
    R2: She felt it was long; some questions were repetitive; no problems with being able to answer exactly what she meant, how she felt, what's happening.
    R3: Fine—this is a very easy survey for me!
    R4: It was just about right; she didn't take long; went very quickly

38. What did you think about the flow of the questionnaire?

    R1: Good; went quickly; she didn't have any problems
    R2: Very smooth
    R3: Nice; fine
    R4: Very good

39. What do you think about the logo, or picture, on the cover page?

    R1: Very cute
    R2: She liked it
    R3: "Makes me smile!"
    R4: She likes it

40. Would you say that it is or isn't appropriate for this questionnaire?

    R1: Fine
    R2: Appropriate
    R3: Very appropriate
    R4: The logo draws her in though it doesn't have a strong connection to the topic

41. This questionnaire is directed to teachers: What did you think about using the term "providers" throughout the questionnaire?

    R1: "Good choice for wording"
    R2: "Good way to put it"
    R3: She suggests avoiding using "providers"; alternate: early childhood educator
    R4: Didn't have a problem with it—the term provider covers a broad range; the title uses teachers—people may think they are respected

42. Should we use the term "teachers" instead?

> *R1: No*
> *R2: "I go with teachers."*
> *R3: Yes*
> *R4: Don't-know—some teachers may want to be addressed as teachers instead of providers; using the term "providers" is comfortable and well respected*

43. How about the term "program": is that an appropriate way to refer globally to childcare sites and centers?

> *R1: Fine*
> *R2: Program is good*
> *R3: Yes*
> *R4: Yes—"program" is an excellent word!*

Those are all of my questions.
Thank you very much for your help! Now we have a respondent gift for you, and I'd like to get your mailing address to send it to you:

You have been generous with your time, and our research team appreciates it very much. Thank you very much again!