Journal of Extension
www.joe.org

June 2012
Volume 50 Number 3
Article Number 3FEA3

Return to Current Issue

Nutrition and Physical Activity Policies and Practices in Family Child Care Homes in Oregon: Baseline Findings from the Healthy Home Child Care Project

Katherine B. Gunter
Assistant Professor and Physical Activity Specialist
Kathy.gunter@oregonstate.edu

Kelly R. Rice
Healthy Home Child Care Project Coordinator
ricek@onid.orst.edu

Stewart G. Trost
Associate Professor
Stewart.trost@oregonstate.edu

Oregon State University
Corvallis Oregon

Abstract: *Baseline findings from the Healthy Home Child Care Project include data from Family Child Care Providers (FCCPs) in Oregon (n=53) who completed assessments of nutrition and physical activity policies and practices and BMI data for children in the care of FCCPs (n=205). Results show that a significant percentage of FCCPs failed to meet child care standards in several areas and that 26.8% of children under the care of FCCPs were overweight or obese. These data supported the development of an Extension-delivered intervention specific to FCCPs in Oregon and highlight areas of concern that should be addressed through targeted trainings of FCCPs.*

Introduction

Early childhood settings have the potential to influence the lives of millions of U.S. children. According to the most recent reports, 61% of children aged 0–6 years not yet in kindergarten (about 12 million children) receive some form of child care on a regular basis from someone other than their parents (Forum on Child and Family Statistics, 2009) and approximately 80% of preschool-aged children (aged 2 to 5 years) with employed mothers receive some form of child care for an average nearing 40 hours a week (Larson, Ward, Neelon, & Story, 2011). While the majority of these children are cared for in a center-based setting such as private preschools or Head Start programs, over 10% are cared for by a non-relative in a home-based environment (Forum on Child and Family Statistics, 2009; Larson et al, 2011). The extensive use of child care outside the home combined with the high prevalence of overweight and obesity among preschool aged children in the United States (Ogden, Carroll, Curtin, Lamb, & Flegel, 2010) highlights the potential of child care settings to affect childhood obesity.

The potential for child care environments to significantly affect children's health is highlighted in recent national reports and initiatives. The Surgeon General's *Vision for a Healthy and Fit Nation 2010* emphasizes the important role of the early childhood environment in preventing obesity (U.S. Department of Health and Human Services, 2010), and Let's Move! Child Care <http://healthykidshealthyfuture.org/welcome.html> was launched to promote healthful eating and increasing physical activity in child care settings. While recommendations for intervention approaches are provided through Let's Move! Child Care and *Vision for a Healthy and Fit Nation 2010,* suggested strategies are based largely on findings from center-based child care environments. Given the dearth of information about family child care settings, and the significant numbers of children receiving care in these environments, the study reported here

provides much needed data to support the development of intervention strategies related to obesity prevention directed toward Family Child Care Providers (FCCPs).

Obesity Prevention in Family Child Care Settings

On average, children attending family child care spend between 21 and 34 hours per week in the care of Family Child Care Providers (FCCPs) (Laughlin, 2010), a figure that underscores the potential impact these environments may have on children's risk for overweight and obesity. A recent review of the role child care settings can have in obesity prevention revealed that opportunities to enhance the child care environment exist in areas such as improving the nutritional quality of food provided to children, increasing opportunities for physical activity, and improving caregivers promotion of health behaviors (Larson et al., 2011). Of note, only three studies examining policies and practices in the family child care setting were identified in the review. Two focused only on nutrition policies and practices (Crepinsek et al., 2002; Freedman & Alvarez, 2010); the third focused on nutrition and physical activity policies and practices (Trost, Messner, Fitzgerald, & Roths, 2009).

In the only study examining FCCPs nutrition and physical activity policies and practices, researchers identified several areas of concern, including a lack of comprehensive policies in both areas, frequent use of unhealthy celebration foods and 100% fruit juice, infrequent servings of low-fat milk, prolonged periods of time spent in sedentary activities such as media-based screen time, lack of sufficient indoor place space, and restricting physical activity to control or punish children who misbehave (Trost, et al., 2009. In a separate study examining perceptions of barriers to healthful physical activity practices among FCCPs, Fees, Trost, Bopp, and Dzewaltowski (2009) reported FCCPs feel uniquely constrained by factors such as the built environment, a lack of resources and training to support age appropriate experiences for a mixed age context, and parental lack of support. Further, the available evidence, although limited, suggests that young children attending family child care homes spend the majority of their time engaging in sedentary behavior , and interventions to promote physical activity in this setting are warranted.

Obesity Prevention Resources for Family Child Care Providers

Few uniform standards exist regarding nutrition and physical activity in the child care setting, and data suggest that opportunities to engage in physical activity vary widely and that the foods and beverages served in child care settings may often be of poor nutritional quality (Larson et al., 2011; Story, 2007). Recommendations from the White House Task Force on Childhood Obesity clearly outline the need for clear, actionable guidance for child care providers on how to increase physical activity, reduce screen time, and improve nutrition in the child care setting (White House Task Force on Childhood Obesity, 2010). Unfortunately, scant resources exist to support child care providers in efforts to improve the physical activity and nutrition environments and recommended evidence-informed initiatives and resources are primarily directed toward center-based settings (White House Task Force on Childhood Obesity, 2010). Existing resources have been developed for use in center-based child care settings, some of which have been delivered through Extension (Niemeir, Tande, Hwang, Stasny, & Hektner, 2010). However, these programs tend to focus on and evaluate individual level outcomes such as children's knowledge about fruit and vegetables and are not specifically designed to modify the environments children inhabit.

Thus a need exists to develop resources and trainings to support family child care providers in creating healthier early childhood environments and meeting proposed new and revised government standards.

Extension's Role in Childhood Obesity Prevention in Family Child-Care Settings

Extension professionals can play an important role in developing and delivering evidence-informed resources and programs to support FCCPs in efforts to promote healthful nutrition and physical activity policies and practices in family child care homes. The Healthy Home Child Care project is a collaborative partnership between Oregon State University's (OSU) School of Biological and Health Sciences, OSU Extension's Family and Community Health Program, the

State of Oregon Child Care Division, and local Child Care Resource and Referral (R&R) agencies.

Informed by the data we present in this issue of *JOE*, OSU researchers and Extension specialists developed the Journey to a Healthy Home Child Care Program. Using a train-the-trainer model, Extension educators were trained to deliver the program to providers through local R&Rs. The target audience includes FCCPs registered through the state Child Care Division. All trainings were reviewed and certified through the Oregon Center for Career Development in Childhood Care and Education, and all FCCPs who enroll in the trainings receive continuing education credits that apply toward their licensure and/or status as a registered child care provider. We are currently evaluating the effect of the program on FCCPs policies and practices and risk for obesity in children attending these family child care homes. Should the program prove effective, we plan to launch a broader dissemination of the program.

In Oregon, the partnership between Extension and local Child Care R&Rs has been strengthened through this program, and demand for trainings is increasing statewide. There are very few existing trainings that focus on healthy eating and physical activity in the family child care setting, and thus an opportunity exists for Extension to fill this void by developing and delivering relevant trainings to FCCPs.

Purpose and Objectives

In order to develop a training that met the needs and training deficiencies of Oregon FCCPs, it was imperative that we assess the current status of the nutrition and physical activity policies and practices among FCCPs in Oregon to inform the development of the Journey to a Healthy Child Care Home intervention program to reduce the risk of childhood obesity. We assessed the nutrition and physical activity policies and practices of FCCPs in seven socioeconomically diverse Oregon counties. We also measured body mass index (BMI) on children aged 2-5 years in the care of those FCCPs to create a profile of overweight and obesity among children attending Family Child Care Homes in Oregon.

Methods

Participants and Settings

Registered FCCPs were recruited from five regional Child Care Resource and Referral (R&R) hubs serving seven counties in Oregon. Registered FCCPs (in Oregon) care for more than three children, up to a total of 10 children at any one time, and do so on a regular basis (more than 70 days in a calendar year). Providers were randomly selected using the Oregon Child Care R&R Network database. The sample was stratified by regional R&R hub, and FCCPs within each strata were sampled with a probability proportional to the total number of FCCPs operating in the hub. Further, to be included in the study, FCCPs needed to provide care to a minimum of two children aged 2-5 years. All children between the ages of 2-5 years attending participating family child care homes were invited to take part in the study. The study was approved by the Oregon State University Intuitional Review Board, and prior to participation, FCCH providers and parents provided written informed consent.

Nutrition and Physical Activity Policies and Practices

To evaluate physical activity policies and practices, FCCPs completed the Nutrition and Physical Activity Self-Assessment for Child Care instrument (NAP SACC-SA) . The content of the NAP SACC-SA was developed after an extensive review of nutrition and physical activity literature, recommendations and standards from credible organizations, as well as input from experts in the field and has established reliability and validity . The instrument includes 38 nutrition items that cover nine content areas and 18 physical activity items addressing six content areas. Each item had four possible response options ranging from minimum standard to best practice. In the following sample question, the first two responses (3 times per week or less; 4 times per week or less) are indicative of practices that do not meet the minimum recommended standard, whereas responses three and four (1 time per day; 2 or more times per day) represent practices that meet and exceed, respectively, minimum recommended standards.

Item Category: Fruits and Vegetable

Question: Fruit (not juice) is offered.
Possible Responses: 3 times per week or less; 4 times per week or less; 1 time per day; 2 or more times per day.

Body Mass Index

Assessments of height and weight were performed in the family child care home. Height was measured to the nearest 1 mm using a portable stadiometer; weight was measured to the nearest 0.1 kg using a portable digital scale. Participants were asked to remove their shoes and stand in the center of the scale. BMI was calculated as body weight divided by height squared ($kg \cdot m^{-2}$). Children were classified as "overweight" or "obese" using the age- and sex-specific 85th and 95th percentiles from the CDC growth charts.

Results

Initially, 63 providers were recruited into the study. Of those, five had too few children in their care when data collection began, and two others were lost to follow-up. An additional three providers did not supply complete data on the NAPSACC and were excluded from the analyses, leaving a final sample of 53 FCCPs. Participating FCCPs were primarily Non-Hispanic White (92%). Most FCCPs (69%) completed high school or obtained a general equivalency diploma, 16% reported some college experience or an associate degree, and 14% reported a bachelor's degree. Approximately 53% were 40 years or older, and nearly 70% participated in the Child and Adult Food Care Program (CACFP).

Nutrition and Physical Activity Policies and Practices

The nutrition results are reported in Table 1. Most FCCPs met or exceeded the minimum standards related to serving fruits, vegetables, fried foods, and high fat meats. Only 34 % of providers reported serving low fat (1%) or skim milk to children, and over 26% reported serving 100% fruit juice daily. More than 65% of FCCPs reported serving whole grain foods at least once per day and 51% reported serving a variety of new and familiar foods most or all of the time.

Table 1.
Prevalence for Nutritional Policies and Practices as Measured by the NAPSACC Instrument

NAPSACC Category	Percentage
FRUITS and VEGETABLES	
Fruit is served fresh, frozen, or canned in its own juice most or all of the time	90.6%
Fruit (not Juice) is served 1 or more time per day	92.5%
Vegetables are served 1 or more times per day	77.4%
Vegetables that are dark green, red, orange, or yellow in color are served at least 3 times per week	77.4%
Cooked Vegetables are usually served with added meat fat, margarine or butter	7.6%
FRIED FOODS and HIGH FAT MEATS	
Fried or pre-fried meats (chicken nuggets) or fish (fish sticks) are served less than 2 times per week	98.1%
Fried or pre-fried potatoes are served less than 2 times per week	98.1%
High Fat Meats are served less than 2 times per week	94.3%
Lean meats are served more than 4 times per week	45.3%

BEVERAGES	
Drinking water is readily available outside	73.6%
Drinking water is readily available inside	98.1%
100% fruit juice is served 1 or more times per day	26.4%
Sugary drinks other than 100% juice are served less than 2 times per week	100%
Milk served to children ages 2 and older is 1% or skim	34.0%
WHOLE GRAINS and VARIETY	
Whole grain foods that are high in fiber are served 1 or more times per day	66.0%
A combination of both new and familiar foods are served most or all of the time	51.0%
Foods from a variety of cultures are served most or all of the time	20.8%
MEALS and SNACKS	
Children are required to finish everything on their plate before leaving the meal table most or all of the time.	24.5%
When children request seconds, additional servings are provided most or all of the time.	71.7%
Food is used to reward desired behavior rarely or some of the time.	98.1%
Food is used to control behavior or withheld as punishment rarely or some of the time.	98.1%
FOOD OFFERED OUTSIDE of REGULAR MEALS and SNACKS	
Sweets or high fat, high salt foods are served for snacks less than 2 times per week	96.2%
Written guidelines are provided to parents for food brought in for celebrations	13.2%
Holidays are celebrated with mostly healthy foods or with non-food treats most or all of the time	41.5%
SUPPORTING HEALTHY EATING	
Children and provider sit down together for meals most or all of the time	60.4%
Meals are served family style most or all of the time	20.8%
Provider consumes the same foods and drinks as the children most or all of the time	43.4%
Provider eats or drinks less healthy foods in front of the children	11.3%
Provider talks with children about trying and enjoying healthy foods most or all of the time	79.3%
NUTRITION EDUCATION	
Provider receives training or attend workshops on nutrition 2 or more times per year	39.6%
Nutrition training is provided by qualified professionals	64.1%
Nutrition education opportunities are offered to parents	43.4%

NUTRITION POLICY	
The provider has a comprehensive written policy on nutrition and food service	52.8%

Almost none of the providers reported using food as a reward or withholding food as a form of punishment. Most FCCPs (96.2%) reported limiting snacks that are high fat or high salt, but very few providers (13.2%) reported having written policies pertaining to celebration foods or snacks. Only 41.5% of providers reported celebrating special events with healthy foods or non-food treats.

Most FCCPs reported regularly encouraging children to try and enjoy healthy foods (79.3%), and very few (11.3%) reported eating less healthy foods in front of children. Over 60% of FCCPs reported sitting down and eating meals with the children on a regular basis, while only 20.8% reported serving meals family style. Only 40% of FCCPs reported receiving annual training two or more times per year, and even fewer reported offering nutrition education opportunities to parents. Less than 53% of providers reported having a comprehensive written policy on nutrition and food service.

The physical activity results are reported in Table 2. Over 80% of FCCPs reported providing 60 minutes or more of active free play time for children every day. Approximately 75% of FCCPs reported providing children with opportunities for outdoor active play daily, but fewer than 60% reported providing daily structured activity. Nearly 35% of FCCPs reported children sitting for more than 30 minutes at a time each day, and over 50% of providers reported restricting active play for children who misbehave. Over 60% of providers reported that the TV is turned on for at least part of every day, and nearly 60% indicated that children under their care are allowed to watch TV and videos or play video games every day.

Table 2.
Prevalence for Physical Activity Policies and Practices as Measured by the NAPSACC Instrument

NAPSACC Category	Percentage
ACTIVE PLAY and INACTIVE TIME	
Active (free) play time is provided for all children for 60 min or more per day	81.1%
Structured physical activity (adult-led) is provided for all children daily	56.6%
Outdoor active play is provided for all children daily	75.6%
Provider restricts active play for children who misbehave	52.8%
Children are seated (excluding nap time) more than 30 min at a time each day	34.0%
TV USE and TV VIEWING	
Television is turned on every day for at least part of the day	60.4%
Children are allowed to watch TV, videos or play video games at least once a day	58.5%
Children are allowed to use a computer for educational purposes or games at least once a day	20.8%
PLAY EQUIPMENT	
A variety of fixed play equipment (swings, slides) is available and suits most children	71.7%
A variety of portable play equipment (balls, wheel toys) is	67.9%

available and suits most children	
Active play using portable play equipment is provided 1 or more times per day	58.5%
When weather is not suitable to go outdoors, indoor play space is available and suitable for all activities.	20.8%
SUPPORTING PHYSICAL ACTIVITY	
Provider often or always play with children during active (free) play time	64.2%
Provider displays posters, pictures or books about physical activity	9.4%
PROVIDER EDUCATION in PHYSICAL ACTIVITY	
Provider receives training or attend workshops on physical activity 1 or more times per year	26.4%
PA training is provided by qualified professional	17.0%
Provider reads books and plays games with physical activity or exercise themes	69.8%
Education about physical activity is offered to parents through flyers, handouts, brochures, newsletters	24.5%
PHYSICAL ACTIVITY POLICY	
Provider has a comprehensive written policy on PA	15.1%

While most providers reported a variety of fixed and portable play equipment was available, less than 60% reported using equipment daily. Only 21% of providers reported sufficient indoor play space to accommodate all activities. Over 60% of FCCPs reported they regularly play with children during active free play and that they read books and played games with physical activity or exercise themes. Only 26.4% of FCCPs reported attending annual trainings on physical activity, and even fewer providers reported offering education about physical activity to parents. Finally, only 15% of providers reported having a comprehensive written policy about physical activity.

Body Mass Index

Height and weight were measured on 205 children (50.2% male) between the ages of 2 and 5 years. Nearly 27% of children were classified as overweight or obese. The prevalence of overweight and obesity was higher in girls (29.7%) than boys (23.9%).

Discussion

We examined the nutrition and physical activity policies and practices of FCCPs in Oregon and profiled the prevalence of overweight and obesity among preschool-age children under the care of these FCCPs. While articles discussing the importance of the early childhood environment on children's risk for overweight and obesity have been published in the *Journal of Extension* (Lanigan & Power, 2008; Niemeir, Tande, Hwang, Stasny, & Hektner, 2010; Robinson, 2004), there are no reports that detail the policies and practices of FCCPs or the overweight and obesity status of children in the care of these providers. We found that while FCCPs are meeting or exceeding the child care standards in a number of areas, there is considerable room to improve nutrition and physical activity policies and practices. Further, we found an alarming proportion of children in the care of these FCCPs were overweight or obese. These findings underscore the potential impact of an Extension-delivered training to improve nutrition and physical activity policies and practices among FCCPs in Oregon.

As it relates to nutrition practices, by and large FCCPs surveyed are meeting or exceeding guidelines related to serving fruit (fresh, frozen or canned) on a daily basis. Providers surveyed also limit sugary drinks, high fat meats, and unhealthy snacks; and drinking water is readily

available. Further, most providers share meals with children in their care, and virtually none of the providers use food as a reward or withhold food as punishment. Areas needing improvement include infrequent servings of lowfat (1%) or skim milk, serving healthy celebration foods, serving meals family style, insufficient nutrition training, and the lack of a comprehensive nutrition policy for their Family Child Care Home. These results are consistent with those reported by Trost et al. (2009), who measured nutritional policies and practices in a representative sample of family child care providers in Kansas (Trost et al., 2009).

It is possible that nutrition policy and practice outcomes may be influenced by participation in CACFP because the majority of FCCPs surveyed indicate that they participate in this program (70%). The CACFP, administered by the U.S. Department of Agriculture, provides meals and snacks daily to over 3.2 million children in center-based or family child care homes. CACFP guidelines mandate a minimum number of servings from four food groups for children 1 year and older. However there are no nutrient-specific guidelines, no requirement that meals are based on the 2010 Dietary Guidelines for Americans, and no requirements for nutrition education.

Thus while it is possible that providers' above-average scores related to the number of fruit and vegetable servings are influenced by participation in this program. It is unlikely other findings are affected by participation in this program. This supposition is supported by the work of Crepinski and colleagues (2002), who examined the influence of lower CACFP reimbursement rates on meals provided in Family Child Care Homes. They found no differences in the number of meals provided or the nutritional aspects of meals offered by providers receiving lower meal reimbursements compared to providers receiving the standard reimbursement rate and providers not enrolled in the CACFP program.

In the area of physical activity, FCCPs are doing well in the provision of sufficient active free play, active outdoor play time, and the provision of fixed and portable play equipment. While a majority of FCCPs (60%) are engaging in active play and reading books and playing games with active themes, there is still room for improvement. Areas of concern included insufficient provision of structured physical activity daily, excessive screen time, restricting physical activity as a form of punishment, lack of sufficient physical activity training, and the lack of a comprehensive physical activity policy. In the study reported here, as in that of Trost et al. (2009), more than 60% of FCCPs reported that the television is on for at least part of every day, and nearly 60% of children attending these family child care homes in Oregon and Kansas spend part of their day watching television or videos. These findings confirm those reported by Christakis et al. (2009), who reported higher levels of screen time in family child care homes relative to center-based and other child care settings (Christakis & Garrison, 2009).

Finally, we found over 26% percent of preschool aged children under the care of these FCCPs were overweight or obese (BMI at or above the 85th percentile for their age and gender). This exceeds the high national average of 21.2% for children aged 2-5 years (Ogden, et al., 2010; Tandon, Zhou, Lozano, & Christakis, 2011) and may signal a difference in the prevalence of overweight and obesity among young children attending child care compared to those cared for by parents.

The possible link between child care attendance and future risk for overweight and obesity was supported by results from a study of 2,400 children entering kindergarten, in which researchers measured the predictive potential of public preschool attendance (Head Start), age, gender, race/ethnicity, and lunch status on BMI category at Kindergarten entry. They found only preschool attendance was associated with an increased risk for overweight (OR = 1.06; 95% CI = 0.96–1.16) and obesity (OR = 1.34; 95% CI = 1.21– 1.47) at kindergarten entry (McGrady, Mitchell, Theodore, Sersion, & Holtzapple, 2010). Thus the data from our study and others underscore the importance of early child care environments to children's risk for overweight and obesity.

Conclusions and Suggestions

FCCPs in Oregon display several areas of concern related to physical activity and nutrition practices and policies that may have a direct influence on the development of obesity in children. And alarmingly, children in the care of these providers exhibit overweight and obesity

at rates higher than the national average. These findings, in conjunction with reports of an association between child care attendance and future risk for obesity, provide ample rationale for the continued development of intervention strategies to support child care providers in improving physical activity and nutrition policies and practices. And, while several curricula and programs exist targeting the center-based child care environment, few resources are available specific to the family child care setting.

An opportunity exists for Extension professionals to address a critical public health issue through a community setting (family child care homes) that is currently not well supported to in childhood obesity prevention efforts. The Journey to a Healthy Child Care Home program is being developed as a train-the-trainer program intended for delivery by Extension educators and/or community partners who support continuing education for child care providers. Our data showing that over 26% of preschoolers are overweight or obese and our findings that FCCPs exhibit deficiencies related to critical nutrition and physical activity policies and practices highlight the importance of this program. These findings also support targeting FCCPs in ongoing Extension efforts. Extension professionals would be justified in targeting FCCPs in community-based health promotion efforts, (e.g., TV Turnoff events), and providing nutrition education to low-income FCCPs through the Supplemental Nutrition Program Education or the Expanded Food and Nutrition Education Program.

Additional potential applications of this work should also be noted. For example, the 4-H/U.S. Army Child and Youth Services' Teen Babysitting Program trains older youth to care for younger youth in their homes (May, 2007). The current training curriculum includes a discussion of nutrition for young children but no discussion of physical activity. Information from the Healthy Home Child Care study could be used to revise the babysitting curricula to implement education about the importance of activity for young children and strategies to increase activity and provide healthful snacks and meals to young children in the home care setting. Thus there is great potential for Extension professionals to have a positive impact on the childhood obesity epidemic through multiple channels by providing trainings, resources, and strategies to help in home child care providers adopt healthful policies and practices related to the prevention of childhood obesity.

References

Ammerman, A. S., Ward, D. S., Benjamin, S. E., Ball, S. C., Sommers, J. K., Molloy, M., & Dodds, J. M. (2007). An intervention to promote healthy weight: Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) theory and design. *Preventing Chronic Disease*, 4(3), Article A67. Retrieved from: http://www.cdc.gov/pcd/issues/2007/jul/06_0115.htm.

Benjamin S. E,. Neelon B., Ball S. C., Bangdiwala S. I., Ammerman A. S., & Ward, D. S. (2007). Reliability and validity of a nutrition and physical activity environmental self-assessment for child care. International Journal of Behavioral Nutrition and Physical Activity, 4(29), 1479-5868.

Christakis, D. A., & Garrison, M. M. (2009). Preschool-aged children's television viewing in child care settings. Pediatrics, 124(6), 1627-1632.

Crepinsek M., Burstein N., Lee E., Kennedy S., Hamilton W., & Abt Associates Inc. (2002). Meals offered by tier 2 CACFP family child care providers. Effects of lower meal reimbursements. Washington DC: US Dept of Agriculture, Economic Research Service.

Fees, B., Trost, S., Bopp, M., & Dzewaltowski, D. A. (2009). Physical activity programming in family child care homes: providers' perceptions of practices and barriers. Journal of Nutrition Education and Behavior, 41(4), 268-273.

Forum on Child and Family Statistics (2009). America's children: Key national indicators of well-being 2009. Retrieved from: http://www.childstats.gov/americaschildren/famsoc3.asp

Freedman M., & Alvarez K. (2010). Early childhood feeding: Assessing knowledge, attitude, and practices of multi-ethnic child-care providers. Journal of the American Dietetics Association,110(3):447-451.

Lanigan, J., & Power, T. G. (2008). Obesity prevention and health promotion: How family life

educators view their role. Journal of Extension [On-line], 46(6), Article 6FEA5. Available at: http://www.joe.org/joe/2008december/a5.php

Larson, N., Ward, D. S., Neelon, S. B., & Story, M. S. (2011). What role can child-care settings play in obesity prevention? A review of the evidence and call for research efforts. Journal of the American Dietetics Association, 111, 1343-1362.

Laughlin, L. (2010). Who's minding the kids? Child care arrangements: Spring 2005 and summer 2006. Current Population Reports, U.S. Census Bureau, 70-121.

May, G. (2007). I have what it takes to be your teen babysitter [On-line]. Retrieved from: http://www.4-hmilitarypartnerships.org/p.aspx?tabid=82.

McGrady, M. E., Mitchell, M. J., Theodore, S. N., Sersion, B., & Holtzapple, E. (2010). Preschool participation and bmi at kindergarten entry: The case for early behavioral intervention. Journal of Obesity [On-line], 2010, Article 3360407. Retrieved from: http://www.hindawi.com/journals/jobes/2010/360407

Niemeir, B. S., Tande, D. L., Hwang, J., Stasny, S., & Hektner, J. M. (2010). Using education, exposure, and environments to increase preschool children's knowledge about fruit and vegetables. Journal of Extension [On-line], 48(1), Article 1IAW6. Available at: http://www.joe.org/joe/2010february/iw6.php

Ogden, C. L., Carroll, M. D., Curtin, L. R., Lamb, M. M., & Flegal, K. M. (2010). Prevalence of high body mass index in US children and adolescents, 2007-2008. JAMA, 303(3), 242-249.

Robinson, S. (2004). Pediatric Overweight Practice Guidelines—Implications for Extension Educators. Journal of Extension [On-line], 42(3), Article 3TOT4. Available at: http://www.joe.org/joe/2004june/tt4.php

Story, M. (2007). Promoting good nutrition and physical activity in child-care cettings. A research brief. Robert Wood Johnson Foundation.

Tandon, P. S., Zhou, C., Lozano, P., & Christakis, D. A. (2011). Preschoolers' total daily screen time at home and by type of child care. Journal of Pediatrics, 158(2), 297-300.

Trost, S. G., Messner, L., Fitzgerald, K., & Roths, B. (2009). Nutrition and physical activity policies and practices in family child care homes. American Journal of Preventive Medicine, 37(6) 537-540.

U.S. Department of Health and Human Services (2010). The Surgeon General's Vision for a Healthy and Fit Nation [On-line]. Retrieved from: http://www.surgeongeneral.gov/library/obesityvision/

White House Task Force on Childhood Obesity (2010). Solving the problem of childhood obesity within a generation. Retrieved from: http://www.letsmove.gov/white-house-task-force-childhood-obesity-report-president.
