UNIVERSITY OF OKLAHOMA HEALTH SCIENCES CENTER
COLLEGE OF ALLIED HEALTH

Results from the Behavioral Nutrition and Physical Activity Laboratory

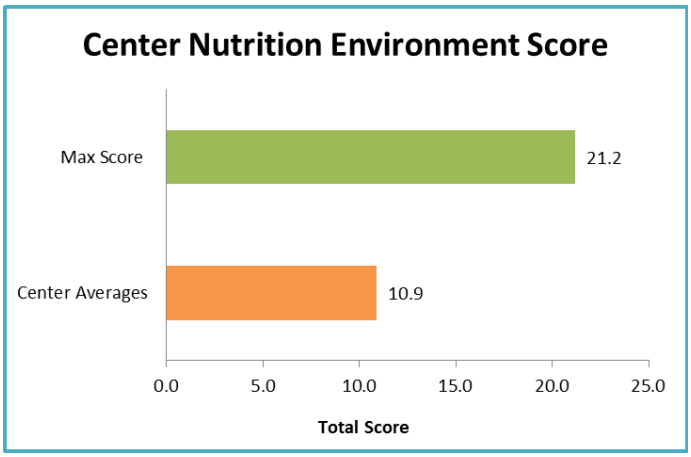
The purpose of this project was to better understand the relationship between the Early Childhood Environment Rating Scale (ECERS-R) and obesogenic characteristics of the child care center environment determined by the Environment and Policy Assessment Observation tool. Nine classrooms of 3 to 5 year old children at 9 child care centers were observed using an observation tool[1] and the ECERS. Centers were selected based on scheduled ECERS observation by the Center for Early Childhood Professional Development. In addition to the classroom environment, the children were observed during lunches for food intake. Participating children wore a physical activity monitor to measure physical activity. This project was conducted by the Behavioral Nutrition and Physical Activity Laboratory from the University of Oklahoma Health Sciences Center with support from Infants Toddlers, Twos and Threes and Department of Nutrition Sciences.

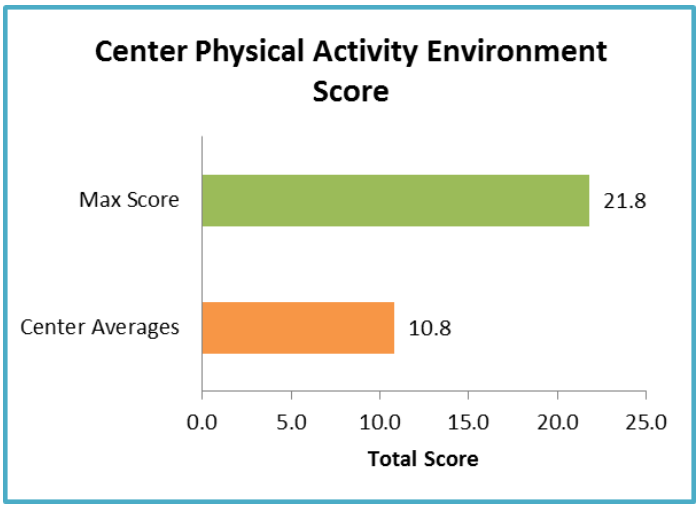
Summary of Project Findings

Project Participants		
• **9 classrooms of 3-5 year old children**	• **74 children total** • **3.6 ± 0.8 mean ECERS** • **21.7 ± 3.5 mean EPAO**	• **49% Male** • **22% Overweight or obese**

Center Nutrition Environment Score

A total nutrition score was found through scoring of the total amount of served fruits and vegetables, high sugar/high fat foods, beverages, and then the nutrition environment, staff-behaviors nutrition, and nutrition training and education. The perfect score was 21.2 for the full day of observation. The graph reflects the total score of all classes compared to the maximum score.



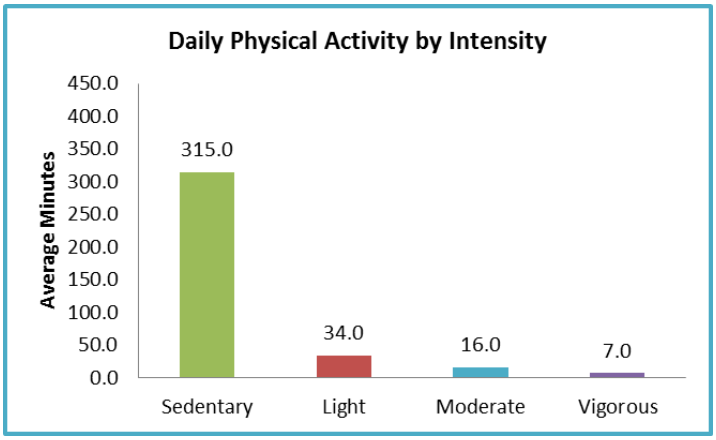


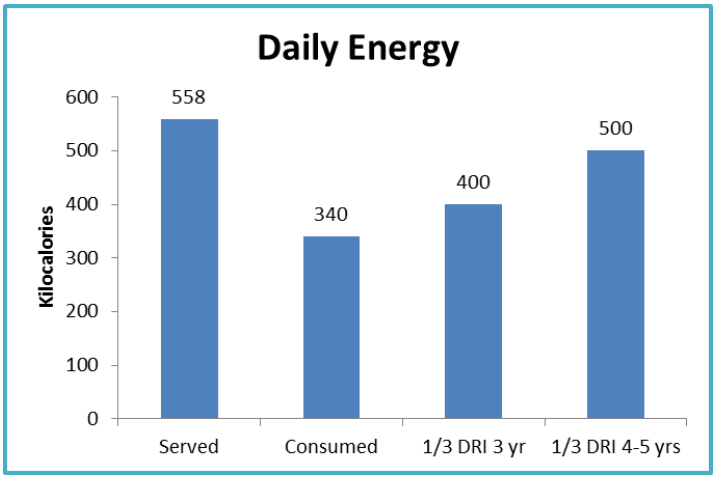
Center Physical Environment Score

The total physical environment score was found through scoring the active and sedentary time of children, sedentary environment, physical activity environment, staff-behaviors for physical activity. The perfect score was 21.8 points for the full day of observation. The graph reflects the total score of each class compared to the maximum score.

Physical Activity

The Centers for Disease Control and Prevention recommends that children spend at least 60 minutes of moderate-intensity aerobic activity daily[2]. And preschool children should spend 60 minutes in structured activity and up to several hours in free play.[3] Children who had parental permission wore physical activity monitors for one or two entire class days. This figure displays the average amount of physical activity, in different intensities, for children in the center.





Dietary Intake

Fruit & Veg
3.2 Fruit & Veg served
2.4 Fruit & Veg eaten

A healthy diet is needed to prevent childhood obesity and other diseases such as diabetes. Guidelines include 5 serving of fruits and vegetables a day, whole grains, lean meats, and drinking water and milk rather than sugary fruit juice or sodas[3]. Children were observed at lunch on one or two occasions. The two charts display the class average of nutrients and energy served and consumed at lunch and the daily recommendation [1/3 (representing lunch only) of the Dietary Reference Intakes (DRIs) specific to age].

Relationship Between ECERS and EPAO

- Higher ECERS associated with healthier environment
- Overall the ECERS does NOT relate to the nutrition scale
- Higher ECERS associated with physical activity scale
- Higher ECERS group time (i.e., individual play) associated with healthier environment for movement
- Higher ECERS space (i.e., access to move) associated with healthier staff support of activity

Relationship Between ECERS and Activity & Nutrition Behaviors

- Higher ECERS associated with more calories served, eaten and more fruits and vegetables served
- Higher ECERS associated with more light activity, vigorous activity, and steps/day

References:
1. Ward DS, Hales, D. Haverly, K., Marks, J., Benjamin, S., Ball, S., Trost, S. An instrument to assess the obesogenic environment of child care centers. *Am J Health Behav.*2008;32(4):380-386
2. Physical Activity Guidelines for Americans. Chapter 3: Active Children and Adolescents
http://www.health.gov/paguidelines/guidelines/chapter3.aspx
3. Child Nutrition. http://www.nlm.nih.gov/medlineplus/childnutrition.html

This Report was prepared by Susan B. Sisson, PhD, RDN, CHES, FACSM on behalf of the Behavioral Nutrition and Physical Activity Laboratory. If you have questions or comments, please contact us at nutritionandactivitylab@ouhsc.edu or 405.271.8001 x 41173.