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Article

Associations between Community Built Environments with Early Care and Education Classroom Physical Activity Practices and Barriers

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Abstract: The influence of community-built environments on physical activity (PA) support in Early Childhood Education settings (ECEs) is unknown. The purpose of this cross-sectional study was to determine associations between community PA environments and ECE classroom PA practices. We included licensed Oklahoma ECE directors serving 3-to-5-year-old children. Parks and playground locations were exported from Google Earth. National Walkability Index was derived from 2010 US Census data. ArcMap 10.6 was used to geocode ECE locations, which were within an Activity Desert if no parks/playgrounds were located within a 1-mile radius or if Walkability Index was 10.5 or below. Classroom PA practices were determined by using the Nutrition and PA Self-Assessment tool (NAP SACC). Barriers to implementing practices were reported. Most Head Starts ($n = 41$; 80.3%), center-based childcare settings (CBC; $n = 135$; 87.0%), and family childcare homes (FCCHs; $n = 153$; 96.4%) were in an Activity Desert. Parks/playgrounds within a 10-mile buffer were correlated with classroom PA practices in FCCHs only ($p < 0.001$). Activity Desert status was not related to classroom PA practices for any ECE context ($p > 0.029$). While FCCHs may be the most vulnerable to lack of park and playground access, overall findings suggest ECEs provide a healthful micro-environment protective of the typical influence of community-built environments.

Keywords: childcare; physical activity practices; barriers; parks; walkability; GIS

1. Introduction

Inadequate physical activity across the lifespan is a major public health concern [1]. Insufficient levels of physical activity in youth are specifically related to metabolic dysfunction, bone strength, fitness, and mental health [2–4]. Early life promotion of physical activity supports development of fine motor and social skills [5,6] and is associated with cognitive function [7] in young children. The early childhood years are formative for

developing lifelong routines and habits, with physical activity patterns often continuing into adolescence and adulthood [8]. For these reasons, the US federal physical activity guidelines recommend that preschool children are physically active throughout the day, and that adult caregivers of young children encourage active play [9]. Similarly, it is recommended that young children limit daily time in sedentary behaviors, including television viewing and screen time [9]. There is much room to improve on such habits nationally, with the majority of US children consistently falling short of physical activity and sedentary time recommendations [10–12]. Thus, promoting healthful physical activity routines for young children has been identified as an effective strategy to improve overall national health.

Child behavior, including physical activity participation, is heavily influenced by primary caregiver encouragement and role modeling [13]. Early Childhood Education settings (ECEs) are therefore ideal for promoting behaviors that predict lifelong health of young children [14]. Such settings have promising population effect, as nearly 60% of preschoolers in the US attend out-of-home care for approximately 33–40 hours each week [15,16]. Specific practices employed in ECE settings, such as providing children with outdoor play, use of portable play equipment, teacher engagement in active play, and having sufficient indoor play space, are associated with higher levels of child physical activity [17,18]. However, some recommended practices have low implementation, and implementation varies by program demographics and ECE context (Head Starts, community-based childcare (CBC), or family childcare homes (FCCHs)) [19–23]. Teachers commonly report barriers to implementing classroom health practices, specifically children lacking proper outerwear, lack of indoor space for active playtime, or lack of resources to purchase play equipment [24–26]. There is additional need to understand prominent predictors of healthful classroom physical activity practices, especially as they may vary by ECE context.

A lack of physical activity-promoting built environment is associated with lower levels of physical activity in adults [27] and young children [28]. Specifically, physical activity is lower among those residing in areas that lack access to public parks and have poor neighborhood walkability [29]. Efforts to promote physical activity in adolescents have included promoting active transportation to and from school [30,31], which is impacted by actual and perceived physical aspects of the built environments of those school neighborhoods [32,33]. For these reasons, built environments surrounding residential areas and schools have been targeted for intervention to promote health behaviors, namely sufficient physical activity, for children of all ages and their caregivers. Influence of the built environment on children's health and behaviors is known but less studied; this could be due to children having less autonomy to explore their neighborhood environments independently, compared to adolescents and adults. This said, little is known about the impact of the community environment on children's caregivers and behavioral role models, specifically on ECEs policies or practices as perceived by their staff. Given that lack of indoor playspace and lack of resources to provide children with play equipment are commonly reported barriers to ECE health practice implementation [24–26], the surrounding community environment may play a vital supporting role for teachers promoting physical activity of their supervised children. Thus, the primary purpose of this study was to determine associations between health of community physical activity environments, including access to parks and walkability, with ECE classroom physical activity practices and barriers, specific to each ECE context (Head Starts, CBCs, and FCCHs). Ecological observation of these factors within each ECE context which experiences unique barriers to practice implementation could provide valuable information to support center- and community-specific intervention and inform tailored resources supporting teachers in adapting a health-related curriculum.

2. Materials and Methods

2.1. Study Design, Sampling Methods, and Recruitment Strategies

The Communities and Classroom Health Survey was a cross-sectional study deployed throughout the state of Oklahoma from November 2019 to February 2020 through mailed surveys distributed to licensed ECEs statewide ($N = 2872$). Locations of 343 Head Starts, 1130 CBCs, and 1648 FCCHs were obtained through a registry of licensed childcare programs provided by the Head Start Office of Collaboration and Oklahoma Department of Education. Approval was obtained from Head Start program directors before distributing surveys to centers within their program; approximately half of program directors approved of the study. ECEs affiliated with Oklahoma tribal nations with an independent Institutional Review Board were excluded from recruitment efforts. The final recruited sample included 191 Head Start centers, 1126 licensed CBCs, and 1645 licensed FCCHs. This study was not considered human subjects research by the Institutional Review Board at the University of Oklahoma Health Sciences Center.

Initial survey packets containing a cover letter, survey booklet, and a postage-paid reply envelope were mailed to all ECE settings in November 2019. A reminder postcard was mailed to all non-respondents in December 2019 and included a link for online survey participation. A second and final round of survey packets was sent to all non-respondents in January 2020. Reminder phone calls were conducted in January and February 2020. Additional survey packets were mailed as requested. An electronic link to complete surveys online by using the Research Electronic Data Capture (REDCap) secure system [34] was also distributed via email by community stakeholders in January 2020. A total of 470 surveys (23.5% response rate) were received and processed from November 2019 to February 2020; this included 64 Head Starts, 207 CBCs, 189 FCCHs, and 10 considered “Other” or ineligible (i.e., after school program only or summer camp).

2.2. Survey Instrument and Sample Characteristics

The Communities and Classrooms Health Survey included questions regarding ECE locations, demographics and characteristics, classroom physical activity practices, and barriers to implementation of physical activity practices (See Supplementary Materials). Surveys were completed by center directors, with instruction to answer questions for classrooms serving 3-to-5-year-old children. Directors were instructed that they could ask additional staff for help on items if they were unsure of how to respond, or if they felt another staff member (e.g., kitchen staff and teachers) might be able to provide a more accurate response. Demographics and potential covariates were reported for each ECE, including information on program context, staff responsibilities, participation in professional development, staff education, demographic distributions of children served, and information on food purchasing. These survey items were derived from a previous statewide survey in Nebraska ECEs [35].

Rural/urban status for each location was considered as a potential covariate and exploratory variable. Status was determined by using the census-tract-level 2010 secondary Rural–Urban Commuting Area (RUCA) codes [36]. RUCA codes are assigned by census tract based on that region’s population density, urbanization, and daily commuting, which identifies urban cores and economically and adjacent territories integrated with those cores. In the present study, ECE locations were geocoded by using ArcMAP 10.6 (ESRI, Redlands, CA, USA), and assigned the RUCA code representing the census tract wherein it is located. Notably, exploratory analysis revealed that constructs of the community physical activity environment surrounding ECEs did not vary significantly by urban/rural status; thus, urban/rural status was presented as a sample characteristic only.

2.3. Health-Enhancing Community Physical Activity Environments

Healthfulness of the community physical activity environment surrounding participating ECEs was determined in ArcMAP 10.6 (ESRI, Redlands, CA, USA) by geocoding ECE locations to determine two primary geographic constructs operationalized in four ways:

(1) proximity to locations of parks and playgrounds within a 1-mile radius, (2) proximity to locations of parks and playgrounds within a 10-mile radius, (3) census tract national Walkability Index, and (4) Activity Desert construct integrating walkability and access to parks and playgrounds. Locations of parks and playgrounds were searched and exported from Google Earth for each county in Oklahoma. Each individual park and playground location was verified by using Google Streetview and up-to-date online state park listings [37,38]. If the listed address was more than a 1-minute walk from the actual point location of the park or playground, latitude and longitude were recalculated using Google Earth placemark function. The original Google Earth search yielded 570 park/playground locations. Eighty-three locations were removed due to being an unsuitable play area or unrelated location; examples include playground equipment retailers, recreation management offices without park on premise, recreational vehicle (RV) sites with no park on the premises, and wildlife reserves for hunting/fishing only. An additional 58 locations were considered private park spaces requiring paid admission, and were therefore removed from analysis. Thus, 379 total parks/playground were geocoded.

The National Walkability Index was determined by using 2010 US Census Tract data, downloaded from the Environmental Protection Agency database [39,40]. Scores were calculated by the US Census based on the census block's group-level built-environment characteristics that predict likelihood of residents walking as a mode of travel [39,41]. The characteristics of community design contributing to a higher and thus more desirable Walkability Index included (1) higher intersection density or street connectivity, (2) closer proximity to transit, (3) higher employment mix, and (4) higher housing mix. Walkability Index scores ranged from one to 20; census tracts with scores of 10.5 and below were considered "below walkable", and tracts with scores above 10.5 were considered "walkable" [41]. To determine Walkability Index score and classification for each ECE, center locations were geocoded and assigned the Walkability Index score of their census tract.

Participating ECEs were considered as located within an Activity Desert if no parks or playgrounds were available within an accessible Euclidian distance of 1-mile, or if national Walkability Index score was "below walkable" (i.e., 10.5 or lower).

2.4. Classroom Physical Activity Practices and Barriers

Classroom physical activity practices were determined by using 17 survey items from the full 54-item Nutrition and Physical Activity Self-Assessment tool (i.e., NAP SACC) [19,42]. The NAP SACC is widely used, with estimates of criterion validity, inter-rater reliability and test-retest reliability previously published, indicating that the self-assessment is a stable and reasonably accurate instrument for use with childcare [19]. Items were answered on a Likert-type scale from one to four, with higher scores indicating either higher frequency or healthier degree of physical activity practice implementation. For each physical activity practice, a score of one indicated not meeting the minimum standard, two indicated meeting the minimum standard, three indicated exceeding the standard, and four indicated far exceeding the standard. Individual item scores were averaged to create five subsection scores: Active Play and Inactive Time (6 survey items), Play Environment (5 items), Supporting Physical Activity (2 items), Physical Activity Education (3 items), and Physical Activity Policy (1 item). Subgroup scores ranged from one to four, with four being the healthiest. All five subscore averages were then summed to calculate a NAP SACC Physical Activity Total Score, which ranged from five to 20.

Barriers to implementing classroom physical activity practices were derived from previous qualitative and quantitative works in the literature in ECEs of all contexts [24–26], and they were approved by an interdisciplinary scientific advisory team. Specifically, there were 16 items to determine barriers to promoting physical activity for young children. Examples of practices to promote physical activity were specified on the survey, and included providing indoor and outdoor playtime, talking with children about physical activity, providing teacher-led physical activity, providing indoor and outdoor play space and equipment, and verbally and physically encouraging children to be physically active.

Providers were asked to report “yes” or “no” to whether their ECE experienced each potential barrier.

2.5. Statistical Analysis

Descriptive statistics (means, standard deviations, and frequencies) were calculated, and all analyses were performed, in SAS v. 9.4. (SAS Institute, Inc., 2013, Carey, NC, USA). All analyses were performed separately for each ECE context (Head Starts, CBCs, and FCCHs). The Shapiro–Wilk test for normality indicated that primary outcome data were not normally distributed ($p < 0.05$ for all ECE contexts). Kruskal–Wallis one-way analysis of variance was used to determine differences in ECE classroom physical activity practice scores between Head Starts, CBCs, and FCCHs. Fisher’s Exact test was used to determine differences in prevalence of reporting barriers (“%yes”) to implementing ECE classroom physical activity practices between Head Starts, CBCs, and FCCHs.

To address the primary aims of the present study, Spearman rank order correlation was used to determine correlation between continuous characteristics of the community physical activity environment (i.e., number of parks within radius buffer and Walkability Index) with ECE classroom physical activity practices. Wilcoxon Rank Sum test was used to determine differences in ECE classroom physical activity practice scores between those located within an Activity Desert and those located within a Non-Desert. Fisher’s Exact test was used to determine differences in prevalence of reporting barriers (“%yes”) to implementing ECE classroom physical activity practices between those located within an Activity Desert and those located within a Non-Desert. The Benjamini Hochberg correction was applied to primary analyses to account for multiple comparison and control for False Discovery Rate, with adjusted alpha $p < 0.029$.

3. Results

In total, 474 Oklahoma ECEs responded, with final response rates being 33.5% for Head Starts ($n = 64$), 18.2% for CBCs ($n = 206$), and 11.6% for FCCHs ($n = 192$). ECEs were excluded if they indicated they were a “Public Pre-K”, did not report ECE context ($n = 15$; 3.1%), or had missing data on primary variables of interest ($n = 94$; 19.8%). Thus, the final analytic sample comprised 365 ECEs, including 51 Head Starts, 155 CBCs, and 159 FCCHs (Table 1).

Table 1. Oklahoma Early Care and Education programs participating in the Communities and Classroom Health Survey in 2019/2020, by context ($n = 365$).

	Head Start ($n = 51$)	CBC ($n = 155$)	FCCH ($n = 159$)
Center Hours (n (%))			
Half Day	16 (31.3)	15 (9.6)	7 (4.4)
Full Day	41 (80.3)	145 (93.5)	154 (96.8)
“Other”	0 (0.0)	10 (6.4)	3 (1.8)
Number of Teachers (mean \pm SD)	4.3 \pm 5.2	4.3 \pm 4.4	1.4 \pm 0.8
Percent of Teachers with Bachelor’s Degree or Higher (mean% \pm SD)	18.7 \pm 31.3	9.7 \pm 21.9	11.3 \pm 29.6
Number of Additional Supporting Staff (mean \pm SD)	4.9 \pm 7.3	2.1 \pm 2.2	0.65 \pm 0.8
Number of Total Classrooms (mean \pm SD)	4.7 \pm 5.0	6.1 \pm 3.3	1.5 \pm 1.5
Number of Classrooms for 3–5-Year-Olds (mean \pm SD)	3.5 \pm 4.8	2.2 \pm 1.1	1.3 \pm 1.4
Number of Total Children (mean \pm SD)	64.7 \pm 82.6	66.3 \pm 45.0	9.0 \pm 4.1
Number of 3-to-5-Year-Old Children (mean \pm SD)	56.1 \pm 83.7	26.5 \pm 19.9	3.8 \pm 2.5

Table 1. Cont.

	Head Start (<i>n</i> = 51)	CBC (<i>n</i> = 155)	FCCH (<i>n</i> = 159)
Percent of 3-to-5-Year-Old Children who are the following ethnicities: (mean% \pm SD)			
Hispanic	16.4 \pm 18.0	4.8 \pm 6.5	3.9 \pm 11.4
American Indian	17.4 \pm 21.8	12.8 \pm 17.4	14.2 \pm 25.3
Asian	1.9 \pm 7.5	1.4 \pm 4.2	0.7 \pm 4.9
Black or African American	11.3 \pm 14.1	10.5 \pm 18.3	10.3 \pm 23.4
Native Hawaiian or Pacific Islander	1.1 \pm 6.7	0.5 \pm 1.9	0.8 \pm 7.3
White or Caucasian	43.4 \pm 26.3	55.4 \pm 30.8	57.2 \pm 38.2
Mixed race	10.9 \pm 11.6	8.4 \pm 13.0	9.7 \pm 20.5
Other	0.7 \pm 5.6	0.3 \pm 2.3	0.1 \pm 1.3
Non-specified	0.5 \pm 3.7	8.1 \pm 23.2	5.3 \pm 18.4
NAEYC Accredited (<i>n</i> (%))	12 (24.0)	17 (11.1)	11 (6.9)
Professional Program Participation (<i>n</i> (%))			
CACFP	50 (98.0)	91 (58.7)	140 (88.0)
Go NAP SACC	4 (7.8)	5 (3.2)	4 (2.5)
Healthy Body, Healthy Minds	3 (5.8)	7 (4.5)	5 (3.1)
Happy Healthy Homes	2 (3.9)	0 (0.0)	10 (6.2)
Certified Early Childhood	11 (21.5)	20 (12.9)	11 (6.9)
Out-of-Center Community Engagement (<i>n</i> (%))			
Very often or Somewhat often	9 (17.6)	42 (27.3)	40 (25.2)
Not very often or Never	42 (82.2)	111 (72.4)	118 (74.6)
Health Advisory Committee (<i>n</i> (%))			
Yes	37 (72.5)	22 (14.1)	8 (5.0)
No	8 (15.6)	129 (83.2)	145 (91.7)
Not sure	6 (11.7)	4 (2.5)	5 (3.1)
Presence of Outdoor Play Policy (<i>n</i> (%))			
Yes, Oklahoma Childcare Licensing	44 (86.2)	115 (74.1)	118 (74.2)
Yes, Plus Additional Policy	3 (5.8)	31 (20.0)	17 (10.6)
No	4 (7.8)	9 (5.8)	24 (15.0)
Percent Urban/Rural within Census Tract (<i>n</i> (%))			
Urban	24 (47.0)	96 (61.9)	96 (60.3)
Rural	27 (52.9)	59 (38.0)	63 (39.6)
Number of Parks/Playgrounds (mean \pm SD)			
Within 1 mile	0.7 \pm 1.1	0.5 \pm 0.9	0.2 \pm 0.7
Within 5 miles	3.4 \pm 3.7	3.7 \pm 3.1	2.7 \pm 2.6
Within 10 miles	5.3 \pm 5.0	7.4 \pm 5.0	6.8 \pm 5.5
Presence of Parks/Playgrounds in Buffer (<i>n</i> (%))			
≥ 1 Within 1 mile	20 (39.2)	49 (31.6)	28 (17.6)
≥ 1 Within 5 miles	36 (70.5)	130 (83.8)	127 (79.8)
≥ 1 Within 10 miles	42 (82.3)	141 (90.9)	140 (88.0)

Table 1. Cont.

	Head Start (<i>n</i> = 51)	CBC (<i>n</i> = 155)	FCCH (<i>n</i> = 159)
Neighborhood Walkability Index (mean \pm SD)	7.9 \pm 2.9	8.5 \pm 2.4	7.2 \pm 2.3
Classification of Neighborhood Walkability (<i>n</i> (%))			
Below Average Walkability (≤ 10.5)	39 (76.4)	120 (77.4)	145 (91.1)
“Walkable” (> 10.5)	12 (23.5)	35 (22.5)	14 (8.8)
PA Desert Status by Urban/Rural (<i>n</i> (%))			
Urban, PA Desert	22 (43.1)	90 (58.0)	92 (57.8)
Urban, Non-Desert	2 (3.9)	6 (3.8)	4 (2.5)
Rural, PA Desert	19 (37.2)	45 (29.0)	61 (38.6)
Rural, Non-Desert	8 (15.6)	14 (9.0)	2 (1.2)

CBC = community-based childcare; FCCH = family childcare home; NAEYC = National Association for the Education of Young Children; CACFP = Child and Adult Care Food Program (CACFP) by USDA; Go NAP SACC = Nutrition and Physical Activity Self-Assessment for Child Care.

For all ECE contexts, the majority participated in CACFP (76.9%), whereas fewer participated in programs to enhance physical activity behaviors, i.e., Go NAP SACC (3.5%) and Healthy Body, Healthy Minds (4.1%). Compared with FCCHs, Head Start centers and CBCs serve more children total and more 3-to-5-year-old children, and reported having a higher number of teachers and additional supporting staff (Table 1). Compared with CBCs and FCCHs, Head Start centers reported highest prevalence of teachers with a Bachelor’s degree or higher, and served a more diverse racial/ethnic distribution of young children. Further, Head Start centers reported the lowest prevalence of regularly engaging in out-of-center activities, had the fewest parks located in a 10-mile buffer radius, had the highest prevalence of being located in a “walkable” census block group, and had the lowest prevalence of being classified within an Activity Desert. Compared with Head Starts and FCCHs, CBCs demonstrated the highest number of parks located in a 10-mile buffer radius and the highest average Walkability Index. Finally, compared with Head Starts and CBCs, FCCHs reported the highest prevalence of regularly engaging in out-of-center activities, the lowest number of parks located within each specified buffer radius, the lowest average Walkability Index, and the highest prevalence of being located within an Activity Desert.

3.1. ECE Context and Classroom Physical Activity Practices

Classroom physical activity practices and reported barriers to implementing those practices significantly varied by ECE context (Table 2).

Table 2. Classroom physical activity practice scores and barriers among Oklahoma ECE programs participating in the Communities and Classroom Health Survey in 2019/2020, by childcare context.

	Head Start (<i>n</i> = 51)	CBC (<i>n</i> = 155)	FCCH (<i>n</i> = 159)	<i>p</i> -Value
Classroom Physical Activity Practice Scores (mean \pm SD)				
NAP SACC Physical Activity Total Score	17.1 \pm 2.1	14.9 \pm 2.5	13.6 \pm 2.7	<0.0001 *
1. Active Play and Inactive Time Score	3.1 \pm 0.3	3.2 \pm 0.4	3.0 \pm 0.4	0.0252 *
2. Play Environment Score	3.6 \pm 0.3	3.5 \pm 0.4	3.3 \pm 0.4	<0.0001 *
3. Supporting Physical Activity	3.6 \pm 0.0	3.0 \pm 0.7	2.8 \pm 0.7	<0.0001 *
4. Physical Activity Education	3.2 \pm 0.8	2.1 \pm 0.9	2.5 \pm 0.8	<0.0001 *
5. Physical Activity Policy	3.5 \pm 0.9	2.6 \pm 1.2	2.1 \pm 1.2	<0.0001 *

Table 2. Cont.

	Head Start (n = 51)	CBC (n = 155)	FCCH (n = 159)	p-Value
Barriers to Classroom Physical Activity Practices (%yes)				
Competing curriculum priorities over PA.	9 (17.6)	31 (17.4)	19 (10.9)	0.1888
Providers unsure how to encourage child PA.	1 (1.9)	20 (12.9)	11 (6.9)	0.0337 *
Limited space for storing toys/equipment.	11 (21.5)	63 (40.9)	58 (36.4)	0.0411 *
Lack of resources to purchase toys/equipment.	10 (19.6)	63 (40.9)	69 (43.4)	0.0067 *
Limited room for indoor active playtime.	26 (50.9)	73 (41.0)	76 (43.9)	0.4478
Limited room for outdoor playtime.	3 (5.8)	14 (7.9)	17 (9.9)	0.6772
Undesirable weather conditions limiting PA.	29 (56.8)	85 (55.5)	102 (28.1)	0.1826
School board does not support PA promotion.	3 (5.8)	6 (3.4)	3 (1.7)	0.2462
Parents/guardians do not support PA promotion.	4 (7.8)	8 (4.5)	6 (3.4)	0.4350
Children arrive wearing improper clothing for PA.	21 (41.1)	69 (38.7)	66 (38.1)	0.9185
Provider concern for child injury.	3 (5.8)	18 (10.1)	16 (9.2)	0.7206
Provider concern for neighborhood safety.	3 (5.8)	5 (2.8)	10 (5.8)	0.3060
Licensing limits type of play equipment allowed.	2 (4.0)	29 (16.5)	19 (11.0)	0.0441 *
Providers prefer to partake in sedentary activity.	3 (5.8)	21 (11.8)	10 (5.7)	0.1155
Providers feel playtime with children is stressful.	1 (1.9)	13 (7.3)	9 (5.2)	0.3757

* indicates significant difference among groups (p -value < 0.05). CBC = community-based childcare; FCCH = family childcare home; NAP SACC = Nutrition and Physical Activity Self-Assessment for Child Care; PA = physical activity; ECE = Early Care and Education.

Across all ECE contexts, average subscores for classroom physical activity practices were mostly higher than two, indicating that Oklahoma ECEs were meeting minimum recommended standards, for the most part. Head Start centers demonstrated the highest NAP SACC Physical Activity Total Score, with the highest scores for Supporting Physical Activity, Physical Activity Education, and Physical Activity Policy. FCCHs demonstrated the lowest NAP SACC Physical Activity Total Score and the lowest values for many subscores. However, Head Start centers reported healthier practices for Physical Activity Education than did CBCs. Subscores for Active Play and Inactive Time and Play Environment were the highest subscores overall across all ECE contexts.

The most commonly reported barriers to implementing classroom physical activity practices across contexts included limited room for indoor playtime, undesirable weather conditions for outdoor play, and children arriving wearing improper clothing. Head Starts reported lower prevalence of all barriers than did CBCs and FCCHs. Compared with Head Starts and FCCHs, CBCs reported the highest prevalence of barriers, including providers being unsure how to encourage child physical activity, limited space for storing play equipment, and licensing limits for type of play equipment allowed. Compared with Head Starts and CBCs, FCCHs reported the highest prevalence of lack of resources to purchase play equipment.

3.2. Parks/Playgrounds, Walkability, Activity Deserts, and Classroom Physical Activity Practices

Constructs of the community physical activity environment, including number of parks or playgrounds within a 1- and 10-mile buffer radius and average Walkability Index, were not correlated with classroom physical activity practices in Head Starts or CBCs ($p > 0.029$ for all) (Table 3).

Table 3. Associations between classroom physical activity practice scores with constructs of the community physical activity environment among Oklahoma ECE programs participating in the Communities and Classroom Health Survey in 2019/2020, by childcare context.

	Head Start (<i>n</i> = 51)			CBC (<i>n</i> = 155)			FCCH (<i>n</i> = 159)		
	# Parks within 1 mile	# Parks within 10 miles	Nat'l. Walk. Index	# Parks within 1 mile	# Parks within 10 miles	Nat'l. Walk. Index	# Parks within 1 mile	# Parks within 10 miles	Nat'l. Walk. Index
NAP SACC Physical Activity Total Score	0.05	−0.10	0.27	−0.08	−0.05	0.05	0.08	0.28 *	0.10
1. Active Play and Inactive Time Score	0.05	−0.25	0.04	−0.05	−0.10	−0.08	0.01	0.15	0.02
2. Play Environment Score	−0.07	0.00	0.25	−0.07	0.03	0.02	0.01	0.16	0.11
3. Supporting Physical Activity	0.01	−0.01	0.33	−0.14	−0.01	0.00	−0.03	0.27 *	0.12
4. Physical Activity Education	−0.07	0.01	0.18	−0.09	−0.05	0.04	0.00	0.21	−0.01
5. Physical Activity Policy	0.10	−0.01	0.16	0.01	−0.01	0.12	0.13	0.14	0.09

Spearman rank order correlation statistics are presented. * A *p*-value < 0.029; indicates significant association after Benjamini Hochberg correction for False Discovery Rate. CBC = community-based childcare; FCCH = family childcare home; NAP SACC = Nutrition and Physical Activity Self-Assessment for Child Care; Nat'l. Walk. Index = National Walkability Index.

Number of parks located within a 10-mile buffer radius was correlated with NAP SACC Physical Activity Total Score, and specifically the Supporting Physical Activity subscore, in FCCHs only (*p* < 0.001 for both). Classroom physical activity practice scores and barriers did not differ by Activity Desert status across all ECE contexts (Table 4; *p* > 0.029 for all).

Table 4. Differences in classroom physical activity practice scores and barriers based on Activity Desert status among Oklahoma ECE programs participating in the Communities and Classroom Health Survey in 2019/2020, by childcare context.

	Head Start (<i>n</i> = 51)		CBC (<i>n</i> = 155)		FCCH (<i>n</i> = 159)	
	Activity Desert (<i>n</i> = 41)	Non-Desert (<i>n</i> = 10)	Activity Desert (<i>n</i> = 135)	Non-Desert (<i>n</i> = 20)	Activity Desert (<i>n</i> = 153)	Non-Desert (<i>n</i> = 6)
Classroom Physical Activity Practice Scores (mean ± SD)						
NAP SACC Physical Activity Total Score	17.1 ± 2.1	17.7 ± 1.9	14.9 ± 2.5	14.8 ± 2.8	13.4 ± 2.7	14.0 ± 2.1
1. Active Play and Inactive Time Score	3.1 ± 0.3	3.2 ± 0.4	3.2 ± 0.4	3.0 ± 0.3	3.0 ± 0.4	3.1 ± 0.3
2. Play Environment Score	3.6 ± 0.3	3.6 ± 0.2	3.5 ± 0.4	3.4 ± 0.3	3.3 ± 0.4	3.4 ± 0.1
3. Supporting Physical Activity	3.5 ± 0.6	3.7 ± 0.5	3.0 ± 0.6	2.9 ± 0.8	2.8 ± 0.7	2.6 ± 0.4
4. Physical Activity Education	3.3 ± 0.6	3.3 ± 0.9	2.5 ± 0.8	2.3 ± 0.9	2.1 ± 0.9	1.9 ± 0.7
5. Physical Activity Policy	3.4 ± 0.9	3.8 ± 0.6	2.6 ± 1.2	3.0 ± 1.1	2.0 ± 1.2	2.8 ± 1.3
Barriers to Classroom Physical Activity Practices (%yes)						
Competing curriculum priorities over PA.	8 (19.5)	2 (20.0)	20 (14.8)	4 (20.0)	15 (9.8)	1 (16.6)
Providers unsure how to encourage child PA.	1 (2.4)	0 (0.0)	17 (12.5)	3 (15.0)	10 (6.5)	1 (16.6)
Limited space for storing toys/equipment.	9 (21.9)	2 (20.0)	58 (42.9)	5 (26.3)	58 (37.9)	0 (0.0)

Table 4. Cont.

	Head Start (n = 51)		CBC (n = 155)		FCCH (n = 159)	
	Activity Desert (n = 41)	Non-Desert (n = 10)	Activity Desert (n = 135)	Non-Desert (n = 20)	Activity Desert (n = 153)	Non-Desert (n = 6)
Lack of resources to purchase toys/equipment.	8 (19.5)	2 (20.0)	52 (38.5)	11 (55.0)	67 (43.7)	2 (33.3)
Limited room for indoor active playtime.	22 (53.6)	5 (50.0)	57 (42.2)	7 (35.0)	70 (45.7)	3 (50.0)
Limited room for outdoor playtime.	1 (2.4)	2 (20.0)	10 (7.4)	3 (15.0)	16 (10.6)	0 (0.0)
Undesirable weather conditions limiting PA.	24 (58.4)	5 (50.0)	74 (55.2)	11 (57.8)	98 (64.0)	4 (66.6)
School board does not support PA promotion.	2 (4.8)	1 (10.0)	5 (3.8)	1 (5.2)	2 (1.3)	0 (0.0)
Parents/guardians do not support PA promotion.	4 (9.7)	0 (0.0)	5 (3.8)	2 (10.0)	4 (2.6)	0 (0.0)
Children arrive wearing improper clothing for PA.	16 (39.0)	5 (50.0)	54 (40.0)	8 (40.0)	58 (37.9)	1 (16.6)
Provider concern for child injury.	2 (4.8)	1 (10.0)	12 (8.9)	4 (20.0)	13 (8.5)	0 (0.0)
Provider concern for neighborhood safety.	2 (4.8)	1 (10.0)	3 (2.2)	1 (5.0)	10 (6.5)	0 (0.0)
Licensing limits type of play equipment allowed.	2 (4.8)	0 (0.0)	18 (13.6)	7 (35.0)	15 (9.8)	1 (16.6)
Providers prefer to partake in sedentary activity.	3 (7.3)	1 (10.0)	16 (11.8)	3 (15.0)	10 (6.5)	0 (0.0)
Providers feel playtime with children is stressful.	1 (2.4)	0 (0.0)	9 (6.6)	3 (15.0)	8 (5.2)	0 (0.0)

A *p*-value < 0.029; indicates significant association after Benjamini Hochberg correction for False Discovery Rate. ECE = center for Early Childhood Education; CBC = community-based childcare; FCCH = family childcare home; NAP SACC = Nutrition and Physical Activity Self-Assessment for Child Care; PA = physical activity.

4. Discussion

The present study aimed to determine how the community physical activity environment, including presence of surrounding parks/playgrounds, Walkability Index, and Activity Desert status, was associated with ECE classroom physical activity practices and barriers by ECE context (Head Starts, CBCs, and FCCHs). Across all ECE contexts, the majority (72–82%) regularly engaged in out-of-center community activities, few were located within a “walkable” area (9–24%), and even fewer were considered to be in a Non-Desert (4–20%). However, constructs of surrounding community physical environments varied across ECE contexts; specifically, FCCHs had fewer nearby parks and playgrounds, were least likely to be located within a “walkable” census block group, and were most likely to be located within an Activity Desert. Present findings were consistent with similar studies in observing that Head Start centers report the healthiest frequency/degree of classroom physical activity practices, while FCCHs typically demonstrate the lowest [19–23]. Finally, the present study found that the presence of more parks and playgrounds was related to healthier physical activity classroom practices in FCCHs only. Activity Desert status was not related to classroom physical activity practices and barriers among any ECE context. To our knowledge, this is the first study to report on how physical activity built environments surrounding ECEs relate to classroom physical activity practices and related experiences (i.e., perceived barriers) of ECE staff.

Overall, the majority of participating ECEs lacked access to parks and playgrounds within a radius of 1 mile. Average Walkability Index of ECE locations were scored below what is considered “walkable”. To our knowledge, this is the first study to describe constructs of the community physical activity environment surrounding ECEs in a statewide

sample. Access to public parks and play areas, as well as actual and perceived walkability and neighborhood safety, are related to higher physical activity levels, lower prevalence of obesity, and higher likelihood of active transportation use for residential communities [27,28,30,31]. Specifically, physical activity is lower among those residing in areas that lack access to public parks and have poor geographic walkability [29]. Notably, in the 2017 US Report Card on Walking and Walkable Communities, Oklahoma ranked poorly as one of just 14 states that met none of the six defined standards supporting “walkable” communities [43]. This lack of access to healthful community physical activity environments may contribute to low reporting of regular community engagement observed in the present study sample across all ECE contexts. Future studies could therefore benefit from describing how ECE community environments may differ across various regions of the US, and additionally understanding how those environments shape ECE community engagement and related outdoor health practices. Such findings could provide important insight into how ECEs engage with their surrounding environments and whether this engagement and influence differs by state/regional context.

The present findings were consistent with similar studies in observing that Head Start centers report healthiest frequency/degree of classroom physical activity practices and FCCHs report the lowest [19–23,35,44]. Practices with the largest difference in implementation between Head Starts and other ECE contexts were physical activity education provided for staff and parents, and the presence of a physical activity policy. Studies have previously reported that classroom health practices are more desirable when staff complete regular continued education [45,46] and when center- or state-level policy includes those practices [47,48]. However, physical activity training is not typically pursued by CBC and FCCH staff [49–51], and related classroom practices are not typically emphasized in state licensure policy [52,53]. In comparison, Head Starts adhere to performance standards that are typically much higher than those expected by state licensing; requirements include frequent staff education and the presence of a stringent policy promoting children’s health behavior. The present study in combination with previous findings suggests a need to promote educational opportunities and policy focused on child physical activity promotion for ECE classrooms. Such changes could be effective strategies to promote overall classroom health practices, especially for CBCs and FCCHs. These consistent differences in classroom health practices between ECE contexts additionally highlight the importance of understanding their predictors, specific to each facility type.

For FCCH providers only, number of nearby parks and playgrounds were associated with classroom physical activity practices. Across all ECE contexts, classroom physical activity practices did not differ by Activity Desert status. Thus, the overall results indicate that ECE programs, especially Head Starts and CBCs, are protective of the typical influence of built environments on health practices for young children. However, FCCHs may be more vulnerable to influence of their surrounding community physical activity environments, particularly in regards to practices supporting physical activity for young children. Contrary to the author’s hypothesis, number of parks within 10 miles, but not within 1 mile, was related to FCCH classroom physical activity practice scores. This may be due to childcare providers utilizing community resources, such as parks, that are not necessarily within walking distance of their center’s location. It is also possible that within larger neighborhoods, a high density of parks are correlated with neighborhood socioeconomical demographics, perceived safety, community resources and engagement, or other potential confounders. Regardless, this association being significant in FCCHs only may be attributable to higher reported frequency of community engagement, combined with FCCHs most commonly reporting lack of resources to purchase toys and play equipment and therefore depending on public play spaces to encourage child physical activity. Recent findings also show Head Starts and CBCs devoting resources to outsourcing companies (i.e., adult organized youth sports leagues) to encourage physical activities for children in their care, a practice likely not feasible among FCCHs [54]. Across the literature, FCCHs report the lowest implementation of physical activity practices [49–51,55,56], and are less

likely to have a written physical activity policy [49] than are other ECE contexts. There is additional evidence suggesting that children attending FCCHs are at higher risk of obesity than are those attending Head Starts and CBCs [57]. Given these concerns, the present study suggests a potential mechanism to improve FCCH classroom practices, and the health of those children served, through constructing tailored resources for FCCH providers in low-access communities. Promoting physical activity policy in FCCHs, and specifically encouraging teacher-led physical activity strategies to overcome limitations in space or play equipment, may be necessary next steps to improve health of these settings.

Strengths and limitations of the present study should be considered. Strengths included use of geographic data, i.e., locations of parks and playground, which were obtained at the same time as the survey was employed and validated by an online search for each individual site. National Walkability Index is a validated measure of the community built environment, and calculated by the US Census [39,40]. The present study also used a statewide sample representing each of the three primary ECE contexts. The primary study aims are novel, and provide valuable insight to inform future policy development and evaluation for ECE settings located in low-access neighborhoods. The present study was also subject to limitations. First, due to the cross-sectional study design, causality cannot be inferred. The current available National Walkability Index was scored from 2010 Census data, and therefore may not fully represent community physical activity environments surrounding ECEs at the time the statewide survey was distributed in 2019/2020. Data were self-reported by ECE directors and could be subject to social desirability, particularly among Head Start centers with assumed knowledge of standards and best practices. The current study sample may also be subject to selection bias, and sample sizes were somewhat limited in stratified analyses. Similarly, findings in the present study may be specific to the state of Oklahoma, having unique geography, demographics and culture. Therefore, the findings should be interpreted with caution and may have limited external generalizability. Finally, the primary respondent was the ECE program director, who may not have complete knowledge of current classroom activities or provider barriers. However, respondents were instructed to defer to the staff with most accurate insight on that practice. Further, the NAP SACC tool to assess classroom health practices is widely used and has been validated against practices observed multiple days in-classroom by trained research personnel [19].

5. Conclusions

The present study provides important insight into how the surrounding community is related to ECE center classroom practices, which is essential to inform tailored resources and policy change to promote physical activity and health for young children. Participating Oklahoma ECEs were mostly located within environments with a lack of access to parks and playgrounds and with poor walkability. Overall, classroom practices and barriers were not associated with constructs of the community physical environment, and were not different by Activity Desert status. However, in FCCHs, higher numbers of nearby parks and playgrounds within a 10-mile proximity were related to healthier overall classroom physical activity practices. These findings suggest that Head Starts and CBCs provide a healthful micro-environment that is protective of the typical influence of the built environment, which may be particularly important for those children served who lack access to health resources in their residential communities. However, FCCHs may be more vulnerable to the health of their surrounding communities, in part due to a lack of resources for providers to purchase sufficient play equipment to promote child health. Future studies should consider the following: (1) describing how ECE community physical activity environments may differ across various regions of the US; (2) understanding how those community physical activity environments shape ECE community engagement, outsourcing companies for physical activity promotion, and related outdoor health practices; (3) constructing tailored resources to promote classroom health for FCCH providers in low-access communities; and (4) determining strategies to promote physical activity policy in FCCHs. Such findings could provide important insight for scientists, practitioners, and policy-makers on how

ECEs engage with their surrounding environments, and how to improve health practices for those most vulnerable to those low-access environments.

Supplementary Materials: The following are available online at <https://www.mdpi.com/article/10.3390/ijerph18126524/s1>, Communities and Classroom Health Survey.

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References

1. Center for Disease Control and Prevention. Lack of Physical Activity. Available online: <https://www.cdc.gov/chronicdisease/resources/publications/factsheets/physical-activity.htm> (accessed on 10 October 2020).
2. Dennison, M.; Sisson, S.B.; Morris, A. Obesogenic behaviours and depressive symptoms in children: A narrative literature review. *Obes. Rev.* **2016**, *17*, 735–757. [\[CrossRef\]](#)
3. Bangsbo, J.; Krstrup, P.; Duda, J.; Hillman, C.; Andersen, L.B.; Weiss, M.; Williams, C.A.; Lintunen, T.; Green, K.; Hansen, P.R.; et al. The Copenhagen Consensus Conference 2016: Children, youth, and physical activity in schools and during leisure time. *Br. J. Sports Med.* **2016**, *50*, 1177–1178. [\[CrossRef\]](#) [\[PubMed\]](#)
4. Janssen, I.; Leblanc, A.G. Systematic review of the health benefits of physical activity and fitness in school-aged children and youth. *Int. J. Behav. Nutr. Phys. Act.* **2010**, *7*, 40. [\[CrossRef\]](#) [\[PubMed\]](#)
5. Bluehardt, M.H.; Shephard, R.J. Using an extracurricular physical activity program to enhance social skills. *J. Learn. Disabil.* **1995**, *28*, 160–169. [\[CrossRef\]](#) [\[PubMed\]](#)

6. Brown, C.G. Improving fine motor skills in young children: An intervention study. *Educ. Psychol. Pract.* **2010**, *26*, 269–278. [CrossRef]
7. Hillman, C.H.; Biggan, J.R. A Review of Childhood Physical Activity, Brain, and Cognition: Perspectives on the Future. *Pediatric Exerc. Sci.* **2017**, *29*, 170–176. [CrossRef]
8. Rovio, S.P.; Yang, X.; Kankaanpää, A.; Aalto, V.; Hirvensalo, M.; Telama, R.; Pahkala, K.; Hutri-Kähönen, N.; Viikari, J.S.; Raitakari, O.T. Longitudinal physical activity trajectories from childhood to adulthood and their determinants: The young Finns study. *Scand. J. Med. Sci. Sports* **2018**, *28*, 1073–1083. [CrossRef]
9. Piercy, K.L.; Troiano, R.P.; Ballard, R.M.; Carlson, S.A.; Fulton, J.E.; Galuska, D.A.; George, S.M.; Olson, R.D. The physical activity guidelines for Americans. *J. Am. Med. Assoc.* **2018**, *320*, 2020–2028. [CrossRef]
10. Katzmarzyk, P.T.; Denstel, K.D.; Beals, K.; Bolling, C.; Wright, C.; Crouter, S.E.; McKenzie, T.L.; Pate, R.R.; Saelens, B.E.; Staiano, A.E. Results from the United States of America's 2016 report card on physical activity for children and youth. *J. Phys. Act. Health* **2016**, *13*, S307–S313. [CrossRef]
11. Sisson, S.B.; Broyles, S.T.; Baker, B.L.; Katzmarzyk, P.T. Screen time, physical activity, and overweight in U.S. youth: National Survey of Children's Health 2003. *J. Adolesc. Health* **2010**, *47*, 309–311. [CrossRef]
12. Sisson, S.B.; Church, T.S.; Martin, C.K.; Tudor-Locke, C.; Smith, S.R.; Bouchard, C.; Earnest, C.P.; Rankinen, T.; Newton, R.L., Jr.; Katzmarzyk, P.T. Profiles of sedentary behavior in children and adolescents: The US National Health and Nutrition Examination Survey, 2001–2006. *Int. J. Pediatr. Obes.* **2009**, *4*, 353–359. [CrossRef] [PubMed]
13. Natale, R.A.; Messiah, S.E.; Asfour, L.; Uhlhorn, S.B.; Delamater, A.; Arheart, K.L. Role modeling as an early childhood obesity prevention strategy: Effect of parents and teachers on preschool children's healthy lifestyle habits. *J. Dev. Behav. Pediatrics* **2014**, *35*, 378–387. [CrossRef]
14. Wechsler, H.; Devereaux, R.S.; Davis, M.; Collins, J. Using the school environment to promote physical activity and healthy eating. *Prev. Med.* **2000**, *31*, S121–S137. [CrossRef]
15. Laughlin, L. Who's Minding the Kids? Child Care Arrangements: Spring. 2011. Available online: <http://www.census.gov/prod/2013pubs/p70-135.pdf> (accessed on 24 August 2015).
16. Redford, J.; Desrochers, D.; Hoyer, K.M. *The Years before School: Children's Nonparental Care Arrangements from 2001 to 2012*; Stats in Brief. NCES 2017-096; National Center for Education Statistics: Washington, DC, USA, 2017.
17. Gunter, K.B.; Rice, K.R.; Ward, D.S.; Trost, S.G. Factors associated with physical activity in children attending family child care homes. *Prev. Med.* **2012**, *54*, 131–133. [CrossRef] [PubMed]
18. Eather, N.; Morgan, P.J.; Lubans, D.R. Social support from teachers mediates physical activity behavior change in children participating in the Fit-4-Fun intervention. *Int. J. Behav. Nutr. Phys. Act.* **2013**, *10*, 68. [CrossRef]
19. Benjamin, S.E.; Neelon, B.; Ball, S.C.; Bangdiwala, S.I.; Ammerman, A.S.; Ward, D.S. Reliability and validity of a nutrition and physical activity environmental self-assessment for child care. *Int. J. Behav. Nutr. Phys. Act.* **2007**, *4*, 29. [CrossRef]
20. Benjamin, S.E.; Ammerman, A.; Sommers, J.; Dodds, J.; Neelon, B.; Ward, D.S. Nutrition and physical activity self-assessment for child care (NAP SACC): Results from a pilot intervention. *J. Nutr. Educ. Behav.* **2007**, *39*, 142–149. [CrossRef]
21. Battista, R.A.; Oakley, H.; Weddell, M.S.; Mudd, L.M.; Greene, J.; West, S.T. Improving the physical activity and nutrition environment through self-assessment (NAP SACC) in rural area child care centers in North Carolina. *Prev. Med.* **2014**, *67*, S10–S16. [CrossRef]
22. Whitaker, R.C.; Gooze, R.A.; Hughes, C.C.; Finkelstein, D.M. A national survey of obesity prevention practices in Head Start. *Arch. Pediatrics Adolesc. Med.* **2009**, *163*, 1144–1150. [CrossRef]
23. Copeland, K.A.; Sherman, S.N.; Khoury, J.C.; Foster, K.E.; Saelens, B.E.; Kalkwarf, H.J. Wide variability in physical activity environments and weather-related outdoor play policies in child care centers within a single county of Ohio. *Arch. Pediatrics Adolesc. Med.* **2011**, *165*, 435–442. [CrossRef]
24. Copeland, K.A.; Kendeigh, C.A.; Saelens, B.E.; Kalkwarf, H.J.; Sherman, S.N. Physical activity in child-care centers: Do teachers hold the key to the playground? *Health Educ. Res.* **2012**, *27*, 81–100. [CrossRef] [PubMed]
25. Copeland, K.A.; Sherman, S.N.; Kendeigh, C.A.; Saelens, B.E.; Kalkwarf, H.J. Flip flops, dress clothes, and no coat: Clothing barriers to children's physical activity in child-care centers identified from a qualitative study. *Int. J. Behav. Nutr. Phys. Act.* **2009**, *6*, 74. [CrossRef] [PubMed]
26. Allison, K.R.; Vu-Nguyen, K.; Ng, B.; Schoueri-Mychasiw, N.; Dwyer, J.J.; Manson, H.; Hobin, E.; Manske, S.; Robertson, J. Evaluation of Daily Physical Activity (DPA) policy implementation in Ontario: Surveys of elementary school administrators and teachers. *BMC Public Health* **2016**, *16*, 746. [CrossRef]
27. Sallis, J.F.; Cerin, E.; Conway, T.L.; Adams, M.A.; Frank, L.D.; Pratt, M.; Salvo, D.; Schipperijn, J.; Smith, G.; Cain, K.L.; et al. Physical activity in relation to urban environments in 14 cities worldwide: A cross-sectional study. *Lancet* **2016**, *387*, 2207–2217. [CrossRef]
28. Roemmich, J.N.; Epstein, L.H.; Raja, S.; Yin, L.; Robinson, J.; Winiewicz, D. Association of access to parks and recreational facilities with the physical activity of young children. *Prev. Med.* **2006**, *43*, 437–441. [CrossRef] [PubMed]
29. Frank, L.D.; Saelens, B.E.; Chapman, J.; Sallis, J.F.; Kerr, J.; Glanz, K.; Couch, S.C.; Learnihan, V.; Zhou, C.; Colburn, T.; et al. Objective assessment of obesogenic environments in youth: Geographic information system methods and spatial findings from the Neighborhood Impact on Kids study. *Am. J. Prev. Med.* **2012**, *42*, e47–e55. [CrossRef] [PubMed]

30. Cooper, A.R.; Andersen, L.B.; Wedderkopp, N.; Page, A.S.; Froberg, K. Physical activity levels of children who walk, cycle, or are driven to school. *Am. J. Prev. Med.* **2005**, *29*, 179–184. [\[CrossRef\]](#)
31. Mackett, R.L.; Lucas, L.; Paskins, J.; Turbin, J. The therapeutic value of children's everyday travel. *Transp. Res. Part. A Policy Pract.* **2005**, *39*, 205–219. [\[CrossRef\]](#)
32. Trapp, G.S.; Giles-Corti, B.; Christian, H.E.; Bulsara, M.; Timperio, A.F.; McCormack, G.R.; Villaneuva, K.P. Increasing children's physical activity: Individual, social, and environmental factors associated with walking to and from school. *Health Educ. Behav.* **2012**, *39*, 172–182. [\[CrossRef\]](#)
33. Timperio, A.; Ball, K.; Salmon, J.; Roberts, R.; Giles-Corti, B.; Simmons, D.; Baur, L.A.; Crawford, D. Personal, family, social, and environmental correlates of active commuting to school. *Am. J. Prev. Med.* **2006**, *30*, 45–51. [\[CrossRef\]](#)
34. Harris, P.A.; Taylor, R.; Thielke, R.; Payne, J.; Gonzalez, N.; Conde, J.G. Research electronic data capture (REDCap)—A metadata-driven methodology and workflow process for providing translational research informatics support. *J. Biomed. Inform.* **2009**, *42*, 377–381. [\[CrossRef\]](#) [\[PubMed\]](#)
35. Dev, D.A.; Garcia, A.S.; Dzewaltowski, D.A.; Sisson, S.; Franzen-Castle, L.; Rida, Z.; Williams, N.A.; Hillburn, C.; Dinkel, D.; Srivastava, D.; et al. Provider reported implementation of nutrition-related practices in childcare centers and family childcare homes in rural and urban Nebraska. *Prev. Med. Rep.* **2020**, *17*, 101021. [\[CrossRef\]](#)
36. USDA Economic Research Service. Rural-Urban Commuting Area Codes. Available online: <https://www.ers.usda.gov/data-products/rural-urban-commuting-area-codes/> (accessed on 19 March 2019).
37. Oklahoma State Parks: TRAVELOK. Available online: <https://www.travelok.com/state-parks> (accessed on 1 May 2020).
38. OKLAHOMA STATE PARKS. Available online: https://www.stateparks.com/oklahoma_parks_and_recreation_destinations.html (accessed on 1 May 2020).
39. Environmental Protection Agency. Smart Location Mapping. Available online: <https://www.epa.gov/smartgrowth/smart-location-mapping> (accessed on 10 September 2020).
40. US Environmental Protection Agency. OA/WalkabilityIndex (MapServer). Available online: <https://geodata.epa.gov/arcgis/rest/services/OA/WalkabilityIndex/MapServer> (accessed on 28 August 2020).
41. Watson, K.B.; Whitfield, G.P.; Thomas, J.V.; Berrigan, D.; Fulton, J.E.; Carlson, S.A. Associations between the National Walkability Index and walking among US Adults—National Health Interview Survey, 2015. *Prev. Med.* **2020**, *137*, 106122. [\[CrossRef\]](#)
42. Ammerman, A.S.; Ward, D.S.; Benjamin, S.E.; Ball, S.C.; Sommers, J.K.; Molloy, M.; Dodds, J.M. An intervention to promote healthy weight: Nutrition and Physical Activity Self-Assessment for Child Care (NAP SACC) theory and design. *Prev. Chronic Dis.* **2007**, *4*, A67. [\[PubMed\]](#)
43. Alliance, N.P.A.P. *The 2017 United States Report Card on Walking and Walkable Communities*; National Physical Activity Plan Alliance: Columbia, SC, USA, 2017.
44. Benjamin-Neelon, S.E.; Vaughn, A.E.; Tovar, A.; Ostbye, T.; Mazzucca, S.; Ward, D.S. The family child care home environment and children's diet quality. *Appetite* **2018**, *126*, 108–113. [\[CrossRef\]](#)
45. Erinosh, T.; Vaughn, A.; Hales, D.; Mazzucca, S.; Gizlice, Z.; Ward, D. Participation in the child and adult care food program is associated with healthier nutrition environments at family child care homes in Mississippi. *J. Nutr. Educ. Behav.* **2018**, *50*, 441–450. [\[CrossRef\]](#)
46. Monsivais, P.; Kirkpatrick, S.; Johnson, D.B. More nutritious food is served in child-care homes receiving higher federal food subsidies. *J. Am. Diet. Assoc.* **2011**, *111*, 721–726. [\[CrossRef\]](#)
47. Kracht, C.L.; Webster, E.K.; Staiano, A.E. A natural experiment of state-level physical activity and screen-time policy changes early childhood education (ECE) centers and child physical activity. *BMC Public Health* **2020**, *20*, 1–11. [\[CrossRef\]](#)
48. Gerritsen, S.; Morton, S.M.; Wall, C.R. Physical activity and screen use policy and practices in childcare: Results from a survey of early childhood education services in New Zealand. *Aust. N. Z. J. Public Health* **2016**, *40*, 319–325. [\[CrossRef\]](#)
49. Trost, S.G.; Messner, L.; Fitzgerald, K.; Roths, B. Nutrition and physical activity policies and practices in family child care homes. *Am. J. Prev. Med.* **2009**, *37*, 537–540. [\[CrossRef\]](#) [\[PubMed\]](#)
50. Loth, K.A.; Shanafelt, A.; Davey, C.S.; O'Meara, J.; Johnson-Reed, J.; Larson, N.; Nanney, S. Does adherence to child care nutrition and physical activity best practices differ by child care provider's participation in support programs and training? *Child. Youth Serv. Rev.* **2019**, *105*. [\[CrossRef\]](#)
51. Erinosh, T.; Hales, D.; Vaughn, A.; Gizlice, Z.; Ward, D. The quality of nutrition and physical activity environments of family child-care homes in a State in the Southern United States. *J. Acad. Nutr. Diet.* **2019**, *119*, 991–998. [\[CrossRef\]](#) [\[PubMed\]](#)
52. Craddock, A.L.; O'Donnell, E.M.; Benjamin, S.E.; Walker, E.; Slining, M. A review of state regulations to promote physical activity and safety on playgrounds in child care centers and family child care homes. *J. Phys. Act. Health* **2010**, *7* (Suppl. 1), S108–S119. [\[CrossRef\]](#) [\[PubMed\]](#)
53. Duffey, K.J.; Slining, M.M.; Benjamin Neelon, S.E. States lack physical activity policies in child care that are consistent with national recommendations. *Child. Obes.* **2014**, *10*, 491–500. [\[CrossRef\]](#)
54. Tassitano, R.M.; Weaver, R.G.; Tenório, M.C.M.; Brazendale, K.; Beets, M.W. Physical activity and sedentary time of youth in structured settings: A systematic review and meta-analysis. *Int. J. Behav. Nutr. Phys. Act.* **2020**, *17*, 1–17. [\[CrossRef\]](#)
55. Dev, D.A.; Williams, N.; Iruka, I.; Garcia, A.S.; Guo, Y.; Patwardhan, I.; Cummings, K.; Rida, Z.; Hulse, E.; Sedani, A. Improving the nutrition and screen time environment through self-assessment in family childcare homes in Nebraska. *Public Health Nutr.* **2018**, *21*, 2351–2359. [\[CrossRef\]](#)

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56. Natale, R.; Page, M.; Sanders, L. Nutrition and physical activity practices in childcare centers versus family childcare homes. *Early Child. Educ. J.* **2014**, *42*, 327–334. [[CrossRef](#)]
 57. Swyden, K.; Sisson, S.B.; Lora, K.; Castle, S.; Copeland, K.A. Association of childcare arrangement with overweight and obesity in preschool-aged children: A narrative review of literature. *Int. J. Obes.* **2017**, *41*, 1–12. [[CrossRef](#)] [[PubMed](#)]

Dear ECE center/home director,

We are conducting a research study seeking to better understand how Early Childhood Education (ECE) centers' surrounding community environment may influence classroom health practices and/or experiences of the childcare staff. Results from this study will provide valuable information to support center-specific intervention and implementation of tailored resources to provide support for teachers who have difficulty implementing health-based curriculum. We are requesting your participation as a center director of a licensed ECE center that **includes children ages 3 to 5 years old**. For this study, a **"center"** may be a **Head Start center, community-based childcare center, or family childcare home**.

This survey contains questions about your ECE center's location and demographics; nutrition, physical activity and other health-related practices; and barriers experienced when attempting to implement classroom health practices. We estimate that it will take about 25 minutes to complete the survey. If you complete the survey, you will be given the opportunity to enter into a drawing for one of forty-five \$25 Amazon gift cards.

Your participation in this study is voluntary. If you choose not to participate or choose to participate but then withdraw from this study, there will be no penalty to you. You can stop the survey at any time. The attached survey will be confidential.

If you have any questions concerning this research study, please email the Principal Investigator, Dr. Susan Sisson, at susan-sisson@ouhsc.edu (405-271-2113 x 41176) or contact the Study Coordinator, Bethany Williams, at Bethany-Williams@ouhsc.edu (405-271-2113 x 41173).

COMMUNITIES AND CLASSROOM HEALTH SURVEY

INSTRUCTIONS: We ask the survey be filled out by **one** director or provider most familiar with the ECE's nutrition, physical activity and other health-related practices. However, you may come across questions that you think someone else in your ECE could answer more easily than you. If so, **please feel free to ask your staff for help**.

- These questions ask about health practices in your **preschool-age classroom(s) (3-5 year old) or Head Start program**. Please answer questions only about your preschool classroom with children ages 3-5 years. Unless otherwise specified, please do NOT include information about your infant classroom or your Early Head Start program (if you have one).
- When we refer to teachers, we mean individuals who have direct contact with preschoolers (3-5 years) and are responsible for supervising meals or snacks for preschool children.
- Please answer about what is currently happening in your ECE, unless a question asks about another time period.
- We do not expect you or your staff will have to consult any administrative records in order to complete the survey.
- If you are unsure about how to answer a question, please give the best answer you can rather than leaving it blank.

For your convenience, you may either complete and mail back the surveys contained in this packet using the postage-paid envelope provided, OR you may instead complete the surveys online. **PLEASE USE THE FOLLOWING LINK IF YOU WOULD LIKE TO COMPLETE THE SURVEYS ONLINE:** https://is.gd/OKcommunities_classrooms

First, to determine ECE access to healthful community resources (healthful food outlets, parks, playgrounds, etc.) we will need the **name and physical location (address)** of your ECE center. This information will remain confidential, and findings will only be discussed in combination with data from other ECEs.

ABOUT YOUR CENTER

1. Which of the following best describes your center?

	YES	NO
Center based child care	<input type="radio"/>	<input type="radio"/>
Family childcare home	<input type="radio"/>	<input type="radio"/>
Head Start	<input type="radio"/>	<input type="radio"/>
Public pre-k program	<input type="radio"/>	<input type="radio"/>
Other (please specify):	<input type="radio"/>	<input type="radio"/>

2. Which of the following best describes your center (select all that apply)?

- ☐ Half-day
☐ Full-day
☐ Other (please specify):

3. Is your center NAEYC accredited?

- ☐ Yes
☐ No
☐ Not sure

4. Is your center tribally-affiliated?

- ☐ Yes
☐ No
☐ Not sure

5. Is your center fully enrolled at this time?

- ☐ Yes
☐ No
☐ Not sure

If you answered "No", what do you think is the major reason?

6. Do 3-5 year old children often leave your center to enroll in other programs (public pre-K, other preschools, etc.)?

- ☐ Yes
☐ No
☐ Not sure

If you answered "Yes", what do you think is the major reason?

7. What is the number of teachers employed at your center who serve 3-5 year old children?

8. Of the teachers employed at your center who serve 3-5 year old children, what estimated percentage have a Bachelor's degree or higher?

9. What is the number of additional supporting staff employed at your center (assistant teachers, aids, substitutes, etc.) who serve 3-5 year old children?

10. What is the number of classrooms in your center **total**?

11. What is the number of classrooms in your center **with children who are 3-5 years old**?

12. What is the number of children in your center **total**?

13. What is the number of children in your center **who are 3-5 years old**?

14. On a typical day, what estimated percentage of 3-5 year old children in your center are Hispanic or Latino?

15. On a typical day, what **estimated percentage** of 3-5 year old children in your center are of the following racial backgrounds?

_____ American Indian or Alaska Native

_____ Asian

_____ Black or African American

_____ Native Hawaiian or Pacific Islander

_____ White or Caucasian

_____ Mixed race

_____ Other (*please specify*):

16. To your knowledge, what **estimated percentage** of 3-5 year old children in your center:

...participate in the Supplemental Nutrition Assistance Program (SNAP)?

...participate in the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC)?

...struggle with hunger?

...lack access to healthy foods at home?

20. Are the food and beverages for your center's meal service prepared on site?

- ☐ Yes
☐ No
☐ Both yes and no (*please explain*):

21. How are the food and beverages for your center's meal service primarily obtained?

- ☐ In-person shopping at a store
☐ Online ordered then picked up in-person
☐ Online and delivered
☐ Over the phone with a vendor

If you answered "In person shopping at store", or "Online ordered then picked up in-person", approximately how many miles to and from (roundtrip) does the center's food purchaser travel to get to the location where the center's foods and beverages are primarily obtained?

22. Who is responsible for planning meals for 3-5 year old children (*select all that apply*)?

- ☐ Owner of ECE
☐ Director or site supervisor/manager
☐ Family childcare provider
☐ Cook or chef
☐ Catering company
☐ Dietician
☐ Parents/guardians provide food for their children
☐ Other (*please specify*):

23. In which of the following does your center participate (*select all that apply*)?

- ☐ Child and Adult Care Food Program (CACFP) by USDA, which provides reimbursement for foods served
☐ Nutrition and Physical Activity Self-Assessment for Child Care (Go NAP SACC)
☐ Healthy Body, Healthy Minds
☐ Happy Healthy Homes
☐ Certified Early Childhood

24. How often does your center participate in out-of-center activities within the community (*for example, visiting public parks, eating at restaurants, nearby field trips, etc.*)?

- ☐ Very often
☐ Somewhat often
☐ Not very often
☐ Never

25. Please indicate which of the following are provided in your center for 3-5 year old children (*select all that apply*)?

- ☐ Breakfast
- ☐ Lunch
- ☐ Dinner
- ☐ Mid-morning snack
- ☐ Mid-afternoon snack
- ☐ Evening snack

26. Please indicate which of the following meals are provided by parents, and not by the center, for 3-5 year old children (*select all that apply*)?

- ☐ Breakfast
- ☐ Lunch
- ☐ Dinner
- ☐ Mid-morning snack
- ☐ Mid-afternoon snack
- ☐ Evening snack

27. Does your center currently have a health advisory committee? (*Note: a health advisory committee is a group of parents and/or community partners that meet to discuss ideas and programs to create healthier spaces for children at your center.*)

- ☐ Yes
- ☐ No
- ☐ Not sure

28. Does your center have a policy restricting outdoor play during certain temperatures (*for example, if it is less than 50 degrees outside*)?

- ☐ Yes: Oklahoma Child Care Licensing policy
- ☐ Yes: Policy in addition to Oklahoma Child Care Licensing
- ☐ No

If you answered "Yes: Policy in addition to OK CC Licensing", please specify:

CENTER ALLERGIES & ASTHMA

1. To your knowledge, what **estimated percentage** of 3-5 year old children in your center have asthma?

2. To your knowledge, what **estimated percentage** of 3-5 year old children in your center have wheezing or whistling in their chest?

3. To your knowledge, what **estimated percentage** of staff in your center have asthma?

4. Does your center have policies and guidelines for managing asthma medications?

- ☐ Yes
- ☐ No
- ☐ Not sure

5. Does your center have policies and guidelines for reducing asthma allergens and irritants?

- ☐ Yes
- ☐ No
- ☐ Not sure

6. Have you ever received any training on any of the following aspects of asthma (*select all that apply*)?

- ☐ No, I've never received any type of asthma training
- ☐ Asthma basics (causes of asthma, signs of asthma flare-ups)
- ☐ Reducing asthma allergens and irritants
- ☐ Asthma medication use and types
- ☐ Asthma management plans
- ☐ Proper administration of asthma medications

7. Does anyone who works at your center smoke or vape on your center's property?

- ☐ Yes, but OUTSIDE only
- ☐ Yes, both INSIDE and OUTSIDE
- ☐ No

8. How confident are you in your center's ability to care for children with asthma?

- ☐ Not at all confident
- ☐ Slightly confident
- ☐ Somewhat confident
- ☐ Very confident
- ☐ Extremely confident

9. In the past 12 months, did you keep any pets such as cats, dogs, gerbils, or birds at your center?

- ☐ Yes
- ☐ No

10. Does your center have wall-to-wall carpet?

- ☐ Yes
- ☐ No

11. Which of the following, if any, are a concern to you at or around your center (*select all that apply*)?

- ☐ None – I do not have any concerns
- ☐ Indoor or outdoor air quality
- ☐ Lead
- ☐ Water quality
- ☐ Radon
- ☐ Crime
- ☐ Asthma and/or allergies
- ☐ Noise/noise pollution
- ☐ Housing quality
- ☐ Natural disasters
- ☐ Toxins in pesticides and/or cleaners
- ☐ Other issues (*please specify*):

CLASSROOM HEALTH PRACTICES: NUTRITION

Please read each statement or question carefully and check the response that best fits your child care facility. Refer to the instructions at the beginning of this survey for clarification on how to complete survey items.

*As a reminder, these questions ask about health practices in your preschool-age classroom(s) (**3-5 year old**) or Head Start program, **NOT** infant classroom or your Early Head Start program (if you have one). Please answer questions about your preschool classroom **with children ages 3-5 years**.*

Fruits and Vegetables Served

- | | | | | |
|---|---|--|--|---|
| 1. Fruit (not juice) is offered: | <input type="radio"/> 3 times per week or less | <input type="radio"/> 4 times per week | <input type="radio"/> 1 time per day | <input type="radio"/> 2 or more times per day |
| 2. Fruit is offered canned in own juice (no syrups), fresh, or frozen: | <input type="radio"/> Rarely or never | <input type="radio"/> Some of the time | <input type="radio"/> Most of the time | <input type="radio"/> All of the time |
| 3. Vegetables (not including French fries, tater tots, hash browns or dried beans) are offered: | <input type="radio"/> 2 times per week or less | <input type="radio"/> 3-4 times per week | <input type="radio"/> 1 time per day | <input type="radio"/> 2 or more times per day |
| 4. Vegetables, other than potatoes, corn, and green beans are offered: | <input type="radio"/> Less than 1 time per week | <input type="radio"/> 1-2 times per week | <input type="radio"/> 3-4 times per week | <input type="radio"/> 1 or more times per day |
| 5. Cooked vegetables are prepared with added meat fat, margarine or butter: | <input type="radio"/> All of the time | <input type="radio"/> Most of the time | <input type="radio"/> Some of the time | <input type="radio"/> Rarely or never |

Meats, Fats, and Grains				
6. Fried or pre-fried potatoes (French fries, tater tots, hash browns) are offered:	<input type="radio"/> 3 or more times per week	<input type="radio"/> 2 times per week	<input type="radio"/> 1 time per week	<input type="radio"/> Less than once a week or never
7. Fried or pre-fried (frozen and breaded) meats or fish (chicken nuggets, fish sticks) are offered:	<input type="radio"/> 3 or more times per week	<input type="radio"/> 2 times per week	<input type="radio"/> 1 time per week	<input type="radio"/> Less than once a week or never
8. High fat meats (sausage, bacon, hot dogs, bologna, ground beef) are offered:	<input type="radio"/> 3 or more times per week	<input type="radio"/> 2 times per week	<input type="radio"/> 1 time per week	<input type="radio"/> Less than once a week or never
9. Beans or lean meats (baked or broiled chicken, turkey, or fish) are offered:	<input type="radio"/> Less than 1 time per week	<input type="radio"/> 1-2 times per week	<input type="radio"/> 3-4 times per week	<input type="radio"/> 1 or more times per day
10. High fiber, whole grain foods (whole wheat bread, oatmeal, brown rice, Cheerios, etc.) are offered:	<input type="radio"/> 1 time per week or less	<input type="radio"/> 2-4 times per week	<input type="radio"/> 1 time per day	<input type="radio"/> 2 or more times per day
11. Sweets or salty foods (cookies, cakes, muffins, chips, etc.) are offered:	<input type="radio"/> 1 or more times per day	<input type="radio"/> 3-4 times per week	<input type="radio"/> 1-2 times per week	<input type="radio"/> Less than once a week or never

Beverages				
12. Drinking water outside is:	<input type="radio"/> Not visible	<input type="radio"/> Visible and available during designated water breaks	<input type="radio"/> Easily visible and available on request	<input type="radio"/> Easily visible and available for self-serve
13. Drinking water inside is:	<input type="radio"/> Not visible	<input type="radio"/> Visible and available during designated water breaks	<input type="radio"/> Easily visible and available on request	<input type="radio"/> Easily visible and available for self-serve
14. <u>100%</u> fruit juice is offered:	<input type="radio"/> 2 or more times per day	<input type="radio"/> 1 time per day	<input type="radio"/> 3-4 times per week	<input type="radio"/> 2 times per week or less
15. Sugary drinks (Kool-Aid, sports drinks, sweet tea, punches, soda) other than 100% juice are offered:	<input type="radio"/> 1 or more times per week	<input type="radio"/> Less than 1 time per week	<input type="radio"/> Less than 1 time per month	<input type="radio"/> Rarely or never
16. Milk served to children ages 3 years and older is usually:	<input type="radio"/> Whole or regular	<input type="radio"/> 2% reduced fat	<input type="radio"/> 1% low fat	<input type="radio"/> Skim or non-fat
17. Soda and other vending machines are located:	<input type="radio"/> In entrance or front of building	<input type="radio"/> In public areas, but not entrance	<input type="radio"/> Out of sight of parents and children	<input type="radio"/> No vending machines on site

Menus and Variety				
18. Menus used are:	<input type="radio"/> 1-week cycle	<input type="radio"/> 2-week cycle	<input type="radio"/> 3-week cycle or more without seasonal change	<input type="radio"/> 3-week cycle or more with seasonal change

19. Weekly menus include a combination of both new and familiar foods:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
20. Weekly menus include foods from a variety of cultures:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time

Feeding Practices

21. When children eat less than half of a meal or snack, the staff help determine if they are full before removing the plate:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
22. When children request seconds, staff help determine if they are still hungry before serving additional food:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
23. Children are encouraged by staff to try a new or less favorite food:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
24. Food is used to encourage positive behavior:	<input type="radio"/> All of the time	<input type="radio"/> Most of the time	<input type="radio"/> Some of the time	<input type="radio"/> Rarely or never

Foods Offered Outside of Regular Meals and Snacks

25. Guidelines provided to parents for food brought in for holidays or celebrations are:	<input type="radio"/> Not available	<input type="radio"/> Loose guidelines with healthier options encouraged	<input type="radio"/> Written guidelines for healthier options that are not always enforced	<input type="radio"/> Written guidelines for healthier options that are usually enforced
26. Holidays are celebrated with mostly healthy foods or with non-food treats like stickers:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
27. Fundraising consists of selling only non-food items (like wrapping paper, coupon books or magazines):	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time

Supporting Healthy Eating

28. Staff join children at the table for meals:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
29. Meals are served family style (children serve themselves with limited help):	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
30. Staff consume the same food and drinks as the children:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
31. Staff eat or drink less healthy foods (especially sweets, soda and fast food) in front of the children:	<input type="radio"/> All of the time	<input type="radio"/> Most of the time	<input type="radio"/> Some of the time	<input type="radio"/> Rarely or never

32. Staff talk informally with children about trying and enjoying healthy foods:	<input type="radio"/> Rarely or never	<input type="radio"/> Some of the time	<input type="radio"/> Most of the time	<input type="radio"/> All of the time
33. Support for good nutrition is visibly displayed in 3 to 5 year old classrooms and common areas by:	<input type="radio"/> No posters, pictures, or books about healthy food displayed	<input type="radio"/> A few posters, pictures, or books about healthy food displayed in a few rooms	<input type="radio"/> Posters, pictures, or books about healthy food displayed in most rooms	<input type="radio"/> Posters, pictures, or books about healthy food displayed in every room

Nutrition Education for Staff, Children, and Parents

34. Training opportunities on nutrition (other than food safety and food program guidelines) are provided for staff:	<input type="radio"/> Rarely or never	<input type="radio"/> Less than 1 time per year	<input type="radio"/> 1 time per year	<input type="radio"/> 2 times per year or more
35. Nutrition education is provided for children through a standardized curriculum:	<input type="radio"/> Rarely or never	<input type="radio"/> 1 time per month	<input type="radio"/> 2-3 times per month	<input type="radio"/> 1 time per week or more
36. Nutrition education opportunities are offered to parents (workshops, activities and take-home materials):	<input type="radio"/> Rarely or never	<input type="radio"/> Less than 1 time per year	<input type="radio"/> 1 time per year	<input type="radio"/> 2 times per year or more

Nutrition Policy

37. A written policy on nutrition and food service that covers most of the above topics:	<input type="radio"/> Does not exist	<input type="radio"/> Exists informally, but is not written or followed	<input type="radio"/> Is written, but not always followed	<input type="radio"/> Is written, available and followed
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BARRIERS TO CLASSROOM HEALTH PRACTICES: NUTRITION

The list below includes possible barriers which some ECE centers and teachers feel makes it harder to **serve healthier meals and snacks**, such as those suggested by the Child and Adult Care Food Program (CACFP) best practices. Examples of those best practices include the following:

- Include fruits and vegetables as snacks
- Serve no juice
- Include vegetable subgroups throughout the week
- Serve meals family style
- Serve 2 servings of whole grain food per day

There are no right or wrong answers. For each statement, please respond "YES" if you feel this is a barrier which your center faces or not, specific to **serving healthier meals and snacks for 3-5 year old children**.

	YES	NO
1. Not enough money to cover the cost of serving healthier meals and snacks	<input type="radio"/>	<input type="radio"/>
2. Lack of control over the types of meals and snacks that are delivered to us	<input type="radio"/>	<input type="radio"/>
3. Those preparing meals and snacks lack the knowledge to prepare healthier foods and beverages	<input type="radio"/>	<input type="radio"/>
4. Those preparing meals and snacks lack the time to prepare healthier foods and beverages	<input type="radio"/>	<input type="radio"/>

	YES	NO
5. Children would not like the taste of healthier meals and snacks	<input type="radio"/>	<input type="radio"/>
6. Directors/providers are concerned about wasting food because children won't eat healthier meals and snacks	<input type="radio"/>	<input type="radio"/>
7. Parents/guardians do not want children to be served healthier foods	<input type="radio"/>	<input type="radio"/>
8. Parents/guardians provide unhealthy snacks and meals	<input type="radio"/>	<input type="radio"/>
9. Limited space for food storage, such as refrigerator and cabinet space	<input type="radio"/>	<input type="radio"/>
10. Lack of availability of healthy foods in my area	<input type="radio"/>	<input type="radio"/>
11. Lack of support from other providers	<input type="radio"/>	<input type="radio"/>
12. Other areas in our program have higher priority than nutrition at this time	<input type="radio"/>	<input type="radio"/>
13. So many different recommendations that providers do not know which to follow	<input type="radio"/>	<input type="radio"/>
14. Unsure which foods can be reimbursed through CACFP	<input type="radio"/>	<input type="radio"/>
15. Weekly schedule limits time to shop more than once per week	<input type="radio"/>	<input type="radio"/>
16. Please describe any other barriers not listed above:		

*The list below includes possible barriers which some ECE centers and teachers feel makes it harder to **use healthful mealtime practices**, such as those suggested by the Child and Adult Care Food Program (CACFP) best practices.*

Examples of those best practices include the following:

- *Praising children for trying new foods*
- *Talking with children about healthy foods*
- *Allowing children to decide when they are full*
- *Sitting with children during mealtime and eating the same foods*
- *Serving meals family style*

*There are no right or wrong answers. For each statement, please respond "YES" if you feel this is a barrier which your center faces or not, specific to **using healthful mealtime practices for 3-5 year old children**.*

	YES	NO
1. Providers do not have time to sit with children during meals	<input type="radio"/>	<input type="radio"/>
2. There are not enough providers in the program to sit with children during meals	<input type="radio"/>	<input type="radio"/>
3. There is not enough money to cover the cost of serving meals and snacks to providers	<input type="radio"/>	<input type="radio"/>
4. Providers are unsure how to encourage children's healthy eating	<input type="radio"/>	<input type="radio"/>
5. Providers do not like the taste of the healthy foods that are served at the childcare program, so they have trouble encouraging children's healthy eating at mealtime	<input type="radio"/>	<input type="radio"/>
6. Providers have dietary restrictions, so they find it difficult to eat the same foods that are served to children	<input type="radio"/>	<input type="radio"/>
7. Providers are uncertain how to handle children who are hesitant to try new foods	<input type="radio"/>	<input type="radio"/>
8. Providers feel mealtimes with children are stressful/chaotic	<input type="radio"/>	<input type="radio"/>
9. If you let children serve themselves, they would not eat/drink enough	<input type="radio"/>	<input type="radio"/>
10. If you let children serve themselves, they would eat/drink too much	<input type="radio"/>	<input type="radio"/>
11. If you let children serve themselves, they will make too much of a mess	<input type="radio"/>	<input type="radio"/>
12. Please describe any other barriers not listed above:		

CLASSROOM HEALTH PRACTICES: PHYSICAL ACTIVITY

Please read each statement or question carefully and check the response that best fits your child care facility. Refer to the instructions at the beginning of this survey for clarification on how to complete survey items.

*As a reminder, these questions ask about health practices in your preschool-age classroom(s) (**3-5 year old**) or Head Start program, NOT infant classroom or your Early Head Start program (if you have one). Please answer questions about your preschool classroom **with children ages 3-5 years**.*

	<i>Active Play and Inactive Time</i>			
1. Active play time is provided to all children:	<input type="radio"/> 45 minutes or less each day	<input type="radio"/> 46-90 minutes each day	<input type="radio"/> 91-120 minutes each day	<input type="radio"/> More than 120 minutes each day
2. Teacher-led physical activity is provided to all children:	<input type="radio"/> 1 time per week or less	<input type="radio"/> 2-4 times per week	<input type="radio"/> 1 time per day	<input type="radio"/> 2 or more times per day
3. Outdoor active play is provided for all children:	<input type="radio"/> 1 time per week or less	<input type="radio"/> 2-4 times per week	<input type="radio"/> 1 time per day	<input type="radio"/> 2 or more times per day
4. Active play time is withheld for children who misbehave:	<input type="radio"/> Often	<input type="radio"/> Sometimes	<input type="radio"/> Never	<input type="radio"/> Never and we provide more active play time for good behavior
5. Children are seated (excluding naps and meals) more than 30 minutes at a time:	<input type="radio"/> 1 or more times per day	<input type="radio"/> 3-4 times per week	<input type="radio"/> 1-2 times per week	<input type="radio"/> Less than once a week or never
6. Television and video use consists of the:	<input type="radio"/> TV turned on for 5 or more hours per week	<input type="radio"/> TV turned on for 3-4 hours per week	<input type="radio"/> TV turned on for 2 hours per week or less	<input type="radio"/> TV used rarely or never

	<i>Play Environment</i>			
7. Fixed play equipment (tunnels) balancing equipment, climbing equipment, overhead ladders) is:	<input type="radio"/> Unavailable at our site	<input type="radio"/> Only one type of equipment is available	<input type="radio"/> Different equipment available that suits most children	<input type="radio"/> Wide variety of equipment available and accommodates needs of all children
8. Portable play equipment (wheel toys, balls, hoops, ribbons) consists of:	<input type="radio"/> Little variety and children must take turns	<input type="radio"/> Some variety but children must take turns	<input type="radio"/> Good variety but children must take turns	<input type="radio"/> Lots of variety for children to use at same time
9. Outdoor portable play equipment is:	<input type="radio"/> Available during special times only	<input type="radio"/> Located out of child sight and reach, staff must access	<input type="radio"/> Available on request	<input type="radio"/> Freely available by children at all times
10. Outdoor space includes:	<input type="radio"/> No open running spaces, no track/path for wheeled toys	<input type="radio"/> Very limited open running space, no track/path for wheeled toys	<input type="radio"/> Plenty of open running space, no track/path for wheeled toys	<input type="radio"/> Plenty of open running spaces and a track/path for wheeled toys

11. Indoor play space is available:	<input type="radio"/> For quiet play only	<input type="radio"/> For very limited movement (jumping and rolling)	<input type="radio"/> For some active play (jumping, rolling and skipping)	<input type="radio"/> For all activities, including running
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<i>Supporting Physical Activity</i>				
12. During active play time staff:	<input type="radio"/> Supervise play only (mostly sit or stand)	<input type="radio"/> Sometimes encourage children to be active	<input type="radio"/> Sometimes encourage children to be active and join children in active play	<input type="radio"/> Often encourage children to be active and join children in active play
13. Support for physical activity is visibly displayed in 3 to 5 year old classrooms and common areas by:	<input type="radio"/> No posters, pictures, or books about physical activity displayed	<input type="radio"/> A few posters, pictures, or books about physical activity displayed in a few rooms	<input type="radio"/> Posters, pictures, or books about physical activity are displayed in most rooms	<input type="radio"/> Posters, pictures, or books about physical activity are displayed in every room

<i>Physical Activity Education for Staff, Children, and Parents</i>				
14. Training opportunities are provided for staff in physical activity (not including playground safety):	<input type="radio"/> Rarely or never	<input type="radio"/> Less than 1 time per year	<input type="radio"/> 1 time per year	<input type="radio"/> 2 times per year or more
15. Physical activity education (motor-skill development) is provided for children through a standardized curriculum:	<input type="radio"/> Rarely or never	<input type="radio"/> 1 time per month	<input type="radio"/> 2-3 times per month	<input type="radio"/> 1 time per week or more
16. Physical activity education is offered to parents (workshops, activities and take-home materials):	<input type="radio"/> Rarely or never	<input type="radio"/> Less than 1 time per year	<input type="radio"/> 1 time per year	<input type="radio"/> 2 times per year or more

<i>Physical Activity Policy</i>				
17. A written policy on physical activity that covers most of the above topics:	<input type="radio"/> Does not exist	<input type="radio"/> Exists informally, but is not written or followed	<input type="radio"/> Is written, but not always followed	<input type="radio"/> Is written, available and followed

BARRIERS TO CLASSROOM HEALTH PRACTICES: PHYSICAL ACTIVITY

The list below includes possible barriers which some ECE centers and teachers feel makes it harder to **promote physical activity**. Examples of those practices include the following:

- Providing indoor and outdoor active playtime
- Talking with children about physical activity
- Providing teacher-led physical activity
- Providing indoor and outdoor play space and equipment
- Verbally and physically encouraging children to be physically active

There are no right or wrong answers. For each statement, please respond "YES" if you feel this is a barrier which your center faces or not, specific to **promoting physical activity for 3-5 year old children**.

	YES	NO
1. There are competing curriculum priorities that take precedent over promoting physical activity	<input type="radio"/>	<input type="radio"/>
2. Providers are unsure how to encourage children's participation in physical activity	<input type="radio"/>	<input type="radio"/>
3. Limited space for storing activity-promoting toys and equipment	<input type="radio"/>	<input type="radio"/>
4. Lack of resources to purchase activity-promoting toys and equipment	<input type="radio"/>	<input type="radio"/>
5. Limited room for indoor active playtime	<input type="radio"/>	<input type="radio"/>
6. Limited room for outdoor active playtime	<input type="radio"/>	<input type="radio"/>
7. Undesirable weather conditions that do not permit outdoor playtime	<input type="radio"/>	<input type="radio"/>
8. Students are reluctant to participate in physical activity	<input type="radio"/>	<input type="radio"/>
9. The school board does not support the idea of promoting physical activity for children	<input type="radio"/>	<input type="radio"/>
10. Parents/guardians do not support the idea of promoting physical activity for children	<input type="radio"/>	<input type="radio"/>
11. Children often arrive to school wearing clothing that is inappropriate for outdoor play or improperly fitting	<input type="radio"/>	<input type="radio"/>
12. Providers are concerned children will injure themselves during active playtime	<input type="radio"/>	<input type="radio"/>
13. Providers are concerned about neighborhood safety during active playtime	<input type="radio"/>	<input type="radio"/>
14. Playground licensing requirements limit ability to provide equipment that allows for vigorous physical activity	<input type="radio"/>	<input type="radio"/>
15. Providers prefer to remain indoors and/or partake in sedentary classroom activities over physical activities	<input type="radio"/>	<input type="radio"/>
16. Providers feel playtime with children is stressful/chaotic	<input type="radio"/>	<input type="radio"/>
17. Please describe any other barriers not listed above:		

CENTER CLEANERS AND AIR FRESHENERS

1. How often do you use bleach at your center?

- ☐ Never, we do not use bleach
- ☐ Daily or a few times a day
- ☐ Weekly or a few times a week
- ☐ Monthly or a few times a month
- ☐ Every few months or less often

2. Does your center use low toxicity or less toxic cleaners?

- ☐ Yes
- ☐ No
- ☐ Not sure

3. What kind of air fresheners are used at your center (*select all that apply*)?

- ☐ None – do not use any type of air freshener or candle
- ☐ Scented candles
- ☐ Spray air fresheners
- ☐ Continuous release (like a plug-in)
- ☐ Incense
- ☐ Essential oils (reed diffuser or other type of diffuser)
- ☐ Essential oil electric or battery diffuser
- ☐ Potpourri
- ☐ Gel canister
- ☐ Other types of air freshener(s) (*please specify*):

CENTER PESTS AND PEST CONTROL

1. To your knowledge, what year was your center building originally built?

2. Integrated Pest Management, often called “IPM” for short, is an approach to keeping pests (bugs, weeds, rats, etc.) below harmful levels and reducing or eliminating pesticide use. Have you heard of IPM?

- ☐ Yes
- ☐ No

3. Does your center use Integrated Pest Management (“IPM”) strategies for pest control?

- ☐ Yes
- ☐ No
- ☐ Not sure

4. Does your center have a written policy for use of pesticides (bug killers, weed killers, rat killers, etc.), stating when and how to apply them?

- ☐ Yes
- ☐ No
- ☐ Not sure
- ☐ Not applicable, **no** pesticides are used

5. Are staff notified before pesticides (including weed killers) are going to be applied **INSIDE or OUTSIDE** of your center?

- ☐ Yes
- ☐ No
- ☐ Not applicable, **no** pesticides are used

6. Are parents notified before pesticides (including weed killers) are going to be applied **INSIDE or OUTSIDE** of your center?

- ☐ Yes
- ☐ No
- ☐ Not applicable, **no** pesticides are used

THE FOLLOWING QUESTIONS ASK ABOUT PESTS AND PEST CONTROL METHODS **INSIDE** YOUR CENTER.

7. In the past 12 months, which of the following pests were a problem **INSIDE** your center (i.e., INDOORS) (select all that apply)?

- ☐ None- **did not** have any **INDOOR** pest problems.
- | | | | | |
|--------------------------------------|--|-----------------------------------|---------------------------------------|------------------------------------|
| <input type="checkbox"/> Ants | <input type="checkbox"/> Fleas | <input type="checkbox"/> Termites | <input type="checkbox"/> Snails/slugs | <input type="checkbox"/> Mold |
| <input type="checkbox"/> Cockroaches | <input type="checkbox"/> Rodents | <input type="checkbox"/> Aphids | <input type="checkbox"/> Spiders | <input type="checkbox"/> Head lice |
| <input type="checkbox"/> Bed bugs | <input type="checkbox"/> Other pest(s) (please specify): _____ | | | |

8. In the past 12 months, which of the following pest control methods did your center use for controlling pests **INSIDE** your center (i.e., INDOORS) (select all that apply)?

- | | | |
|--|---|--|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Sprayed Pesticides | <input type="checkbox"/> Bait stations or poison traps |
| <input type="checkbox"/> Sticky fly strips | <input type="checkbox"/> Mouse or rat traps | <input type="checkbox"/> Moth balls |
| <input type="checkbox"/> Poison pellets or powders | <input type="checkbox"/> Removed food sources | <input type="checkbox"/> Fixed leaks |
| <input type="checkbox"/> Cleaned the area | <input type="checkbox"/> Sealed cracks/openings | <input type="checkbox"/> Installed screens or other barriers |
| <input type="checkbox"/> Other (please specify): _____ | | |

9. In the past 12 months, who applied the **INDOOR** pesticides used at your center (select all that apply)?

- | | | |
|---|--|---|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Director | <input type="checkbox"/> Another staff member |
| <input type="checkbox"/> Myself | <input type="checkbox"/> Custodial/janitorial staff | <input type="checkbox"/> Pest control company |
| <input type="checkbox"/> Property owner | <input type="checkbox"/> Other (please specify): _____ | |
| <input type="checkbox"/> Not sure | | |

10. In the past 12 months, how frequently were pesticides sprayed, scattered, or "bombed" **INSIDE** your center (i.e., INDOORS) (select all that apply)?

- | | | |
|---|---|--|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Once a week | <input type="checkbox"/> Once a month |
| <input type="checkbox"/> Once a year | <input type="checkbox"/> A few times a year | <input type="checkbox"/> Whenever pests become a problem |
| <input type="checkbox"/> Not applicable- pesticides were used, but not sprayed, scattered, or "bombed" | | |

THE FOLLOWING QUESTIONS ASK ABOUT PESTS AND PEST CONTROL METHODS **OUTSIDE** YOUR CENTER.

11. In the past 12 months, which of the following pests were a problem **OUTSIDE** your center (i.e., OUTDOORS) (select all that apply)?

- ☐ None- **did not** have any **OUTDOOR** pest problems.
- | | | | | |
|---|--|-----------------------------------|---------------------------------------|------------------------------------|
| <input type="checkbox"/> Ants | <input type="checkbox"/> Fleas | <input type="checkbox"/> Termites | <input type="checkbox"/> Snails/slugs | <input type="checkbox"/> Mold |
| <input type="checkbox"/> Cockroaches | <input type="checkbox"/> Rodents | <input type="checkbox"/> Aphids | <input type="checkbox"/> Spiders | <input type="checkbox"/> Scorpions |
| <input type="checkbox"/> Wasps/yellow jackets | <input type="checkbox"/> Other pest(s) (please specify): _____ | | | |

12. In the past 12 months, which of the following pest control methods did your center use for controlling pests **OUTSIDE** your center (i.e., OUTDOORS) (*select all that apply*)?

- | | | |
|--|---|--|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Sprayed Pesticides | <input type="checkbox"/> Bait stations or poison traps |
| <input type="checkbox"/> Sticky fly strips | <input type="checkbox"/> Mouse or rat traps | <input type="checkbox"/> Applied weed killer |
| <input type="checkbox"/> Poison pellets or powders | <input type="checkbox"/> Removed food sources | <input type="checkbox"/> Fixed leaks |
| <input type="checkbox"/> Cleaned the area | <input type="checkbox"/> Sealed cracks/openings | <input type="checkbox"/> Installed screens or other barriers |
| <input type="checkbox"/> Cut grass or weeds | <input type="checkbox"/> Other pest(s) (<i>please specify</i>): _____ | |

13. In the past 12 months, who applied the **OUTDOOR** pesticides used at your center (*select all that apply*)?

- | | | |
|---|---|---|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Director | <input type="checkbox"/> Another staff member |
| <input type="checkbox"/> Myself | <input type="checkbox"/> Custodial/janitorial staff | <input type="checkbox"/> Pest control company |
| <input type="checkbox"/> Property owner | <input type="checkbox"/> Other (<i>please specify</i>): _____ | |
| <input type="checkbox"/> Not sure | | |

14. In the past 12 months, how frequently were pesticides sprayed, scattered, or “bombed” **OUTSIDE** your center (i.e., OUTDOORS) (*select all that apply*)?

- | | | |
|---|---|--|
| <input type="checkbox"/> Nothing used | <input type="checkbox"/> Once a week | <input type="checkbox"/> Once a month |
| <input type="checkbox"/> Once a year | <input type="checkbox"/> A few times a year | <input type="checkbox"/> Whenever pests become a problem |
| <input type="checkbox"/> Not applicable- pesticides were used, but not sprayed, scattered, or “bombed” | | |

Thank you! We greatly appreciate the time you have taken to complete this survey. For your convenience, **please use the postage-paid return envelope included in your survey packet to return your questionnaire.**

Finally, if you would like to be entered into a drawing for one of forty-five \$25 Amazon gift cards, **please include your name and email address below**; this information will **not** be connected with your survey responses, and will **only** be used to contact those who have been randomly selected to receive Amazon gift cards.

Name: _____

Email Address: _____

If you have any questions concerning the research study, please contact the Principal Investigator, Dr. Susan Sisson at susan-sisson@ouhsc.edu (405-271-2113 x 41176) or Study Coordinator, Bethany Williams at Bethany-Williams@ouhsc.edu (405-271-2113 x 41173).