D-60 Free Communication/Poster - New Insights in Children and Youth

Thursday, May 30, 2019 - 1:00 PM - 6:00 PM
Room: CC-Hall WA2

1915 Board #71 May 30 3:30 PM - 5:00 PM
The Comparison of Children Active Travel Mode Time Under the Different Air Quality
JiaChuan Xue, Gang He. Capital University of Physical Education and Sports, Beijing, China.
Email: de3an@hotmail.com

(No relationships reported)

There are sufficient evidence to confirm the adverse effects of air pollution and the positive effects of active travel mode on the health. However, few studies have research on the impact of different air quality on children active travel mode time, especially in Asia country like China.

PURPOSE: By comparing the active travel mode time of children under the different air quality areas to show the impact on air quality of children active travel mode time.

METHODS: Through Beijing Municipal Environmental Protection Bureau to record the past year daily AQI (air quality index) data of different areas in Beijing, and according to the data to select two schools in good air quality (the AQI is 91 and 96) and two schools in poor air quality (the AQI is 102 and 120), all totals of 407 students (boys = 217, age = 10.78 ± 0.93 yrs). Using the questionnaire to record the children active travel mode time, including the time of children to go to school or other places on foot during the weekdays and weekend, and the time of children to go to school or other places by bike during the weekdays and weekend. The data were analyzed by using one-way ANOVA.

RESULT: By comparing the active travel mode time of children in two schools with AQI of 91 and 96 (68.67±111.38 vs. 117.30±137.68 mins, P<0.05); By comparing the active travel time of children in two schools with AQI of 91 and 102 (68.67±111.38 vs. 154.66±304.29 mins, P<0.05).

CONCLUSION: Air quality may have an impact on children active travel mode time, the children in the best air quality areas have relatively less active travel mode time. Future studies should consider the more factors that may impact the children active travel mode time.

1916 Board #72 May 30 3:30 PM - 5:00 PM
Physical Activity, Sedentary Time, Body Composition and Cardiorespiratory Fitness In 4th Grade Hispanic Children
Luis A. Torres-Villalba1, Lucia del R Martinez1, Carmen Nevarez2, Mercedes Rivera1, Farah A. Ramirez-Marreo, FACSM1. 1University of Puerto Rico - Rio Piedras Campus, San Juan, Puerto Rico. 2University of Puerto Rico - Medical Sciences Campus, San Juan, Puerto Rico.

(No relationships reported)

Physical activity (PA) positively influences health parameters such as cardiorespiratory fitness (CRF) and body composition in children and adolescents. However, evidence of these associations, including sedentary time (ST), among Hispanic children is insufficient.

PURPOSE: To determine associations between PA, ST, and CRF in 4th grade Hispanic children in Puerto Rico.

METHODS: A group of 70 boys (n=33) and girls (n=37). 9.4±0.3 years of age completed a CRF test (PACER) and body composition evaluation (height, weight, calf and triceps skinfolds) using the FITNESSGRAM® protocol, and wore an accelerometer for 7-consecutive days. T-tests and Wilcoxon rank-sum tests were conducted to test for sex differences when appropriate, and correlation analyses by sex to test for associations between variables.

RESULTS: Compared with boys, girls were less active (238.7±481.1 vs. 199.4±72.4 min/day of moderate to vigorous PA, P=0.01; 18528±4539 vs. 15030±5883 steps/day, P<0.01) and more sedentary (6.8±1.2 vs. 7.8±1.8 hrs/day, P=0.01). Boys and girls were not different in their mean BMI (18.0±5.0 vs. 18.5±4.3 kg/m², P=0.63), %fat (22.6±11.0 vs. 25.2±8.1 %, P=0.26), max steps/min (133±14 vs. 131±18 steps, P=0.57), and CRF test (34.2±21.2 vs. 26.5±17.1 laps, P=0.11). CRF in boys was inversely correlated with BMI and %fat (rho=−0.39 (P<0.04), −0.42 (P=0.02), respectively), and directly correlated with vigorous PA (rho=0.40, P=0.03); while in girls, CRF was inversely correlated with BMI and %fat (rho=−0.40, P<0.04).

CONCLUSION: Although boys and girls appear sufficiently active, lower PA and higher ST among girls should be addressed to promote healthier lifestyles. Also, the influence of PA intensity and body composition on CRF appear to differ by sex, a consideration for future PA interventions in this population.

Supported in part by FIP/DEGI/UPRPP.

1917 Board #73 May 30 3:30 PM - 5:00 PM
Effects of Exergaming on Motor Skill Competence, Perceived Competence, and Physical Activity in Preschool Children
Zan Gao, FACSM1, Nan Zeng2, Zachary C. Pope3, Ru Wang3, Fang Yu3. 1University of Minnesota, Minneapolis, MN. 2Colorado State University, Fort Collins, CO. 3Shanghai University of Sport, Shanghai, China.
Email: gaoz@umn.edu

(No relationships reported)

PURPOSE: Few school settings offer structured physical activity (PA) opportunities for preschool children, with little study conducted examining exergaming’s effectiveness on health outcomes in this age group. This study’s purpose, therefore, was to examine a school-based exergaming intervention’s effect on preschool children’s perceived competence, motor skill competence and PA versus usual care (recess), as well as examine gender differences for these outcomes.

METHODS: Sixty-five preschoolers (33 girls; Mage = 4.45 ± 0.46; MSESeducation = 59.05 ± 32.04) from 2 underserved urban elementary schools in a Midwestern U.S. state were enrolled and then assigned to 1 of 2 conditions, with school as experimental unit: (1) usual care recess group (6 weeks of 100 minutes [5 days x 20 minutes] recess/week); and (2) exergaming intervention group (8 weeks of 100 minutes [5 days x 20 minutes] school-based exergaming/week). All children underwent identical perceived competence, motor skill competence and moderate-to-vigorous PA (MVPA) assessments at baseline and at the end of the 8th week. A multivariate analysis of variance with repeated measures was employed to examine preschool children’s changes in perceived competence, motor skill competence and MVPA over time.

RESULTS: A significant Group by Time effect was observed for MVPA (F(1, 52) = 4.37, p = 0.04, ηp² = 0.04), but not perceived competence (F(1, 52) = 0.83, p = 0.37, ηp² = 0.02) or motor skill competence (F(1, 52) = 0.02, p = 0.88, ηp² = 0.00). Specifically, intervention children displayed significantly greater increased MVPA at 8 weeks than the comparison children (4.05 vs. -1.99 minute). Additionally, there was a significant Time effect for motor skill competence (F(1, 52) = 15.61, p < 0.01, ηp² = 0.23) and Gender effect for MVPA (F(1, 52) = 5.06, p = 0.02, ηp² = 0.09). In detail, while all preschoollers’ motor skill competence improved over time, boys demonstrated higher MVPA than girls at both time points.

DISCUSSION: Exergaming showed a positive effect in promoting preschool children’s MVPA at school and has the potential to enhance perceived competence and motor skill competence. More research with larger sample sizes and longer study durations is warranted.