



## Building Healthy Communities: Elementary School Program

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## Overview

- Schools' role in supporting healthy behaviors and school-related benefits
- Building Healthy Communities program
- Outcomes of the Building Healthy Communities program





# Benefits of Healthy Eating & Physical Activity

Physical	<ul> <li>Reduced chance of obesity</li> <li>Reduced risk for chronic diseases</li> </ul>
Emotional	<ul> <li>Reduced feelings of depression &amp; anxiety</li> <li>Promotes psychological well-being</li> </ul>
Cognitive	<ul> <li>Improved attention &amp; concentration</li> <li>Memory</li> <li>Verbal ability</li> <li>Academic Achievement</li> </ul>



### Whole-of-School Approach

- Greater alignment, integration and collaboration between health and school culture
- To improve physical and cognitive health



#### COMMUNITY Health Education **Physical Education &** Community **Physical Activity** Involvement COOPDINATING POLICY, PROCESS, & APAACH Nutrition Family Environment Engagement & Services CHALLENGEN Physical **ENGAGED** Education Physical Activity Before and After School Physical Activity During Health Employee School Services Wellness SUPPORTED MIR DUING LEARNING AND IMPROVING HEALTH COMMUNITY 60 minutes day Counseling, Family & Physical Staff Psychological, & Community Environment Involvement **Social Services** Engagement Social & Emotional Climate

WHOLE SCHOOL, WHOLE COMMUNITY, WHOLE CHILD

A collaborative approach to learning and health



# **Our Vision**

- Create a program that increases physical activity, improves children's healthy eating habits AND ultimately impacts childhood obesity
- Improve academic achievement of children who participate in the program

### **Building Healthy Communities – Elementary School Program**

- 40 elementary schools annually across the State of Michigan
- Since 2009, we have worked with over 89,425 students and 228 elementary schools in the state





# Building Healthy Communities: Elementary School Program

- Building Healthy Communities: Elementary School Program
  - Focused on six key components
    - 1. Principal engagement
    - 2. Classroom education
    - 3. Quality physical education
    - 4. Active recess
    - 5. Student leadership
    - 6. Healthy kids club (Afterschool program)
- Each school has an initial onboarding professional development





### **Principal Engagement**



- Supports program implementation
- Reads daily morning announcement
- Facilitates newsletter and electronic messaging







### **Classroom Education**



- Teaching classroom healthy eating lessons
  - Taught by coordinator, co-taught, and then teacher led
- Physical activity break resources
- Classroom newsletter messaging
- Parent handouts
- Recommendations for healthy classroom transformation
  - Policy changes surrounding food and not using PA as punishment



### **Quality Physical Education**



- EPEC curriculum
  - The Exemplary Physical Education Curriculum<sup>™</sup> for K–5
- PE equipment to support the curriculum
- EPEC professional development and training
  - Includes introduction to the boxed curriculum and PE best practices
- On-going support for PE teachers



#### Principal engagement 6 Healthy kids clubs 2 Classroom education on nutrition and physical activity **Building Healthy Communities: Engaging Elementary Schools** 5 Student leadership 3 Quality physical education Active recess

### **Active Recess**

- PA equipment for recess along with a recess cart
- Training for recess monitors and classroom teachers
- Indoor recess training





### Student Leadership



- Fuel Up to Play 60
  - Partner with UDIM (United Dairy Industry of Michigan)
  - Schools have the opportunity to win an additional \$4000 in grant money
  - Encouraged to complete all six steps
  - Required to fulfill two "plays" during the grant period (one PA and one HE)
  - Student leadership team is formed and the BHC coordinator checks in with the Student Leadership team leader



## Healthy Kids Club



#### • After-school Club

- Designed to be a free opportunity for physical activity
- Healthy snack is provided
- Students participant in a walking/running club for 20 minutes
- 20 minutes of fun, non-sport, games provided by the club leader











**Centeio, E.E.,** McCaughtry, N., Gutuskey, L., Garn, A., Shen, B., Martin, J., & Kulik, N. (2014). *Comprehensive School Physical Activity Programs in Urban Elementary Schools.* Journal of Teaching in Physical Education, 33, 573-591.

• **PURPOSE:** This study explored overall changes in student, educator, and parent physical activity after an 8-month CSPAP-based program.

#### **Participants**

- Six urban elementary schools
  - Students: 301 fourth graders (M<sub>age</sub> = 9.39; SD = .44; Girls = 57%; African American (53%), Caucasian (23%), Other (20%), Hispanic (2%), Asian/Pacific Islander (1%), and American Indian (1%)
  - Guardians: 109 completed Pre/Post surveys (Mage = 36.38; SD = 6.04; 91 mothers, 17 fathers, and 1 male guardian; 53% African American, 29% Caucasian, 1% Hispanic, and 17% Other)
  - Educators: 22 4<sup>th</sup> grade teachers (Mexperience = 10.8 years, SD = 8.64) and 12 administrators (Mexperience = 1.76 years, SD = 2.89)



Participants were engaged in the BHC program in their school for 8 months

#### <u>Measures</u>

- Students
  - Self-reported age, gender, race/ethnicity
  - Physical activity measured in steps by accelerometers (Actigraph GT3X+)
- Adults
  - Self Reported PA data with the short version IPAQ (International Physical Activity Questionnaire)
    - (Craig et al., 2003; Lee, Macfarlane, Lam, & Stewart, 2011)





#### <u>Results</u>

- **Student** In-School MVPA increased by an average of 4.5 minutes per day
  - Pillai's Trace, F(1,308) = 100.09, P < .001, η2 = .25
  - 4.5 minutes a day is equivalent to 22.5 additional minutes of MVPA per week
  - Over one school year this totals 810 minutes of MVPA, 27 separate bouts of 30 minutes of MVPA or an extra 54 PE classes.
- **Parent** physical activity (reported in MET-minutes)
  - Increase in MET-min of PA reported from pre to post
  - Pillai's Trace, F(1,115) = 13.39, P < . 001, η2=.10; Mpre = 10,402 MET-min, Mpost = 18,181 MET-min</li>
- Educator physical activity (reported in MET-minutes)
  - No significant change in physical activity



**Centeio, E.E.,** Somers, C., Moore, E.W., Kulik, N., Garn, A., Shen, B., Martin, J., Fahlman, M., & McCaughtry, N. (under review). *The relationship between academic achievement and healthy school transformations in urban elementary schools.* Research Quarterly for Exercise & Sport

• **PURPOSE:** This study examined the relationships between physical activity, fruit and vegetable consumption, obesity level, and academic rate of improvement in math computation and reading comprehension

#### **Participants**

- Four urban schools
- 378 fourth graders ( $M_{age}$ = 9.04; SD = .74; Girls = 44.6%)
- African American (45.7%), Caucasian (26.1%), Multi-Racial (15.1%), Other (8.2%), Arab American (3.4%), Hispanic (1%), and Asian (.5%)



Participants were engaged in the BHC program in their school for 8 months

#### <u>Measures</u>

- Self-reported age, gender, race/ethnicity
- Weight, height, waist circumference
- Physical activity measured in steps by accelerometers (Actigraph GT3X+)
- Aerobic fitness (PACER)
- Fruit and vegetable intake (SPAN)
- Academic achievement
  - Math AIMSweb
  - Reading DIBELS
- Program implementation









Centeio<sup>,</sup> E.E., McCaughtry<sup>,</sup> N., Moore, E.W., Garn, A., Fahlman, M., Martin<sup>,</sup> J., & Kulik, N. (2017). *Building Healthy Communities: A Comprehensive School Health Program to Prevent Chronic Disease.* To be presented at ASCM Annual meeting, Denver, CO.

**PURPOSE:** This study examined the impact of a school-wide nutrition and PA intervention on 5<sup>th</sup> graders' central adiposity as a primary predictor of chronic disease.

#### **Participants**

- Six Metro Detroit schools (4 treatment and 2 control)
- 628 (377 treatment, 251 control) 5<sup>th</sup> graders





Participants took part in the 6 component BHC program in their school for 8 months while the control schools did not participate in any new PA or nutrition programming

#### <u>Measures</u>

- Self-reported age, gender, race/ethnicity
- Waist to Height Ratio
  - Better early predictor of central adiposity and chronic disease

#### **Data Analysis**

• ANCOVA – to control for T1 differences between treatment and control groups



#### <u>Results</u>

- ANCOVA
  - Controlled for age, gender, and race
  - Significant difference in Waist to Height ratio among treatment and control groups at time two F<sub>MI</sub>(24.61,63.08) = 4.59, p <.001, R<sup>2</sup><sub>Treament</sub> = 0.01
  - There were no significant differences in T2 WHtR based on:
    - Age F<sub>MI</sub>(0.02,63.08) = 0.44, p >.05
    - Gender F<sub>MI</sub>(0.03,63.08) = 0.001, p >.05
    - Race F<sub>MI</sub>(0.15,63.08) = 0.02, p >.05
  - A total of 64% of T2 WHtR variance was accounted for by this model



### **Conclusions**

- The BHC healthy school intervention led to significant differences in central adiposity (obesity) levels among 5<sup>th</sup> grade students, regardless of age, gender, or race
- This supports the ability of schoolwide programs to significantly and positively impact student health and chronic disease prevention







### Building Healthy Communities: Elementary School Program

### **Final Thoughts**

- Building Healthy Communities elementary school program is only one example of a comprehensive program to promote physical activity and healthy eating
- We are encouraged by the positive results that the program is having on elementary aged youth
- We have a lot more presentations that I didn't have time to present today, but if you are interested I can send you copies of the presentations
  - Examples:
    - Lessons learned with implementing comprehensive health and PA programming
    - The role of principals in successful school interventions



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