

Promoting Active PE in the Commonwealth of Northern Mariana Islands – Evaluating SPARK Implementation for K-12

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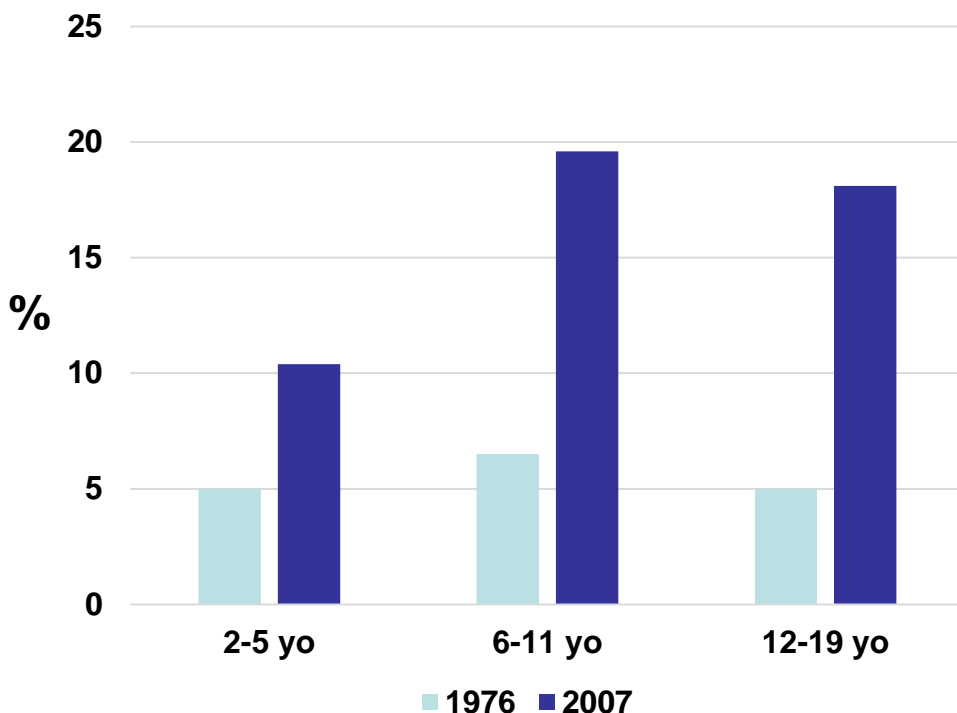
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Support: Commonwealth of Northern Mariana Islands (CNMI) Public School System

Background – Childhood Obesity

**Percent Overweight/Obese
Children in US by age group
(CDC 2008)**



- **Pacific Island children especially high risk**
 - **Samoan children ~9X higher odds of overweight vs. white children.**
 - **Filipinos, Native Hawaiians, & other PI also higher odds of being overweight (Novotny, Oshiro, & Wilkens, 2013)**

Background – Physical Activity

- **PA ↓ obesity risk and associated problems (hypertension, diabetes, etc)**
- **PA ↑ bone strength, aerobic fitness, and high-density lipoproteins**
- **PA ↑ psychological health, cognition, concentration, and academic achievement**

Role of Schools

- **3 periods of health risk:**
 - the prenatal period, adiposity rebound (preschool to early school age), and adolescence
- **Schools well-positioned during the adiposity rebound and adolescence**

SPARK

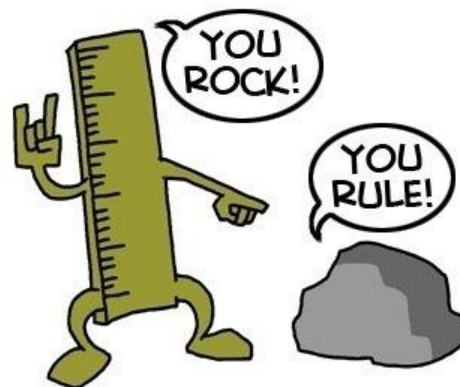
- **Sports, Play, & Active Recreation for Kids (SPARK) ↑ PA among students across grades**
 - Dowda, Sallis, McKenzie, Rosengard, & Kohl III, 2005;
 - McKenzie, Sallis, Faucette, Roby, & Kolody, 1993;
 - McKenzie, Sallis, Kolody, & Faucette, 1997
- **Limited application in Pacific Islanders**

Purpose

To test SPARK in the Commonwealth of the Northern Mariana Islands Public School System (CNMI-PSS)



Methods



Procedures

- **Pre-post test during 2007-2008**
- **All public schools invited to 2-day SPARK premium trainings**
 - one fall day (November, 2007) and one spring day (March, 2008)
- **Grades**
 - K-2 (lower elementary)
 - 3-5 (upper elementary)
 - 6-12 (junior/high school)

Participants - CNMI-PSS

- **Saipan (12 El., 2 JH, & 3 SH); Rota & Tinian each (1 El., 1 JH, & 1 SH)**
- **278 elem & 236 secondary teachers**
- **5,706 elem & 5,036 secondary students**
 - **Chamorro (41%), Filipino (28%), and Carolinian (11%) most prevalent ethnicities**
- **Each school sent 2-5 teachers to each training (~30% of all teachers)**

Curriculum -



- Developed for PE & classroom teachers
- ↑ PA and physical skill levels, while ↑ PA confidence & promoting positive PA and health attitudes
 - develop basic motor & manipulative skills - throwing, kicking, catching, etc.
 - skill progression & integration of fine & gross motor activities
 - develop positive social skills

www.sparkpe.org

Evaluation

School Level	T1 (baseline # of sites)		T2 (follow-up # of sites)
	SOFIT	Pedometer	SOFIT
Elementary	6	3	6
Junior High	3	3	3
High School	3	3	4
Total	13	9	14

Note: 10 out of 13 classes were re-observed and 4 classes were added

Evaluation Tools - SOFIT

- **Momentary time sampling: student activity levels, lesson context, and teacher instruction**
- **4 children (2F & 2M) - randomly chosen**
- **observation begins when >50% present and ends when >50% departs**
- **1 student observed for 4-minutes**
- **10-sec. observe/10-sec. record**
 - **Walkman ☺**

Evaluation Tools - SOFIT

- **Activities** coded: lying down, sitting, standing, walking, very active
- **Lesson Context** coded: management, knowledge, fitness, skills, game, other
- **Teacher Interactions** observed hierarchically: promote fitness, demonstrate fitness, instruct, manage, observe, other tasks
 - highest category is marked for period

Evaluation - Pedometer

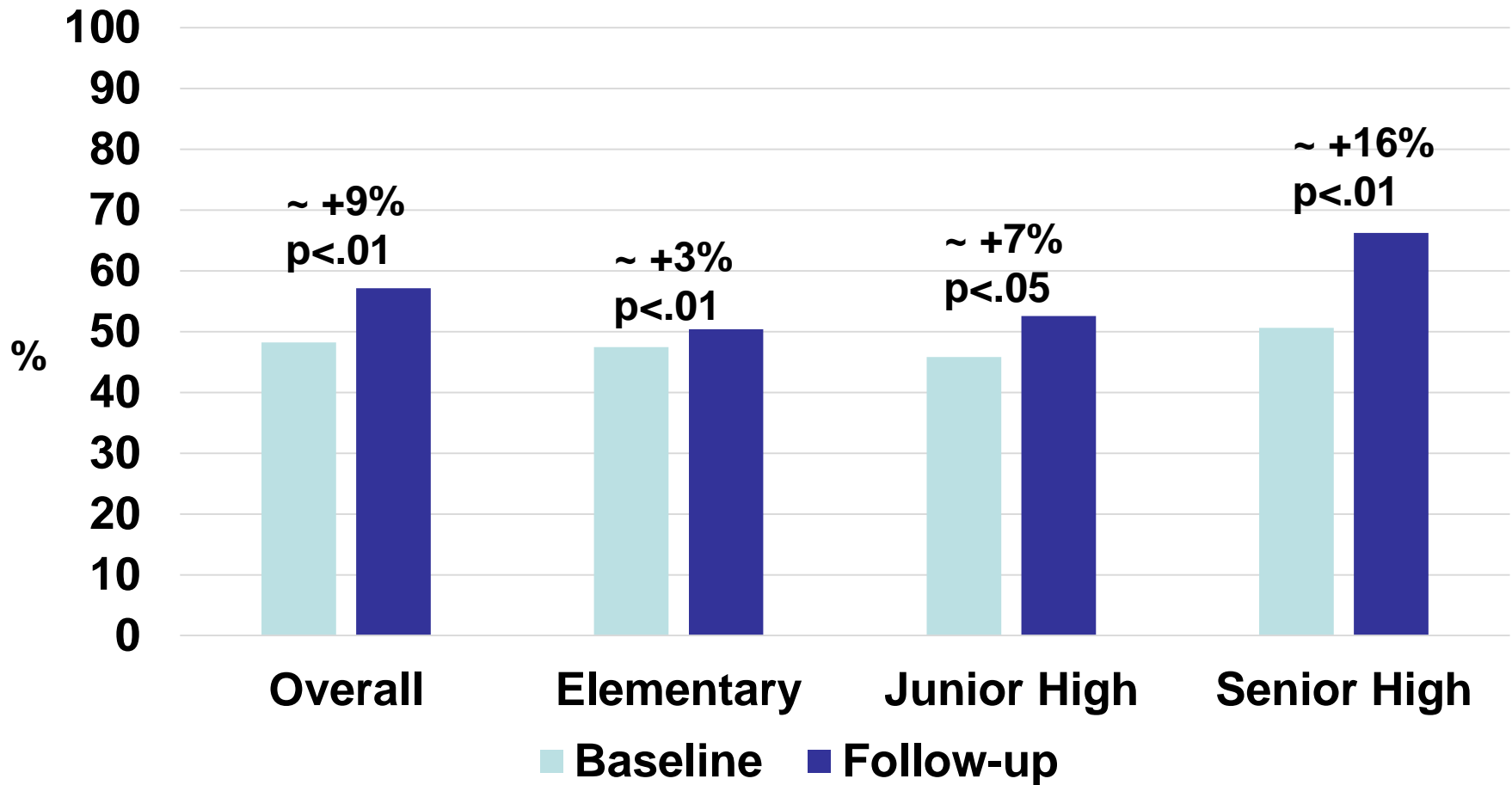
- **Pedometers (New Lifestyles Digi-Walker SW-701)**
- **Validation of PA during observed SOFIT classes**
- **Baseline correlation of mean pedometer count/minute & % of MVPA time in class $r=.65$, $p<.01$**



Results



%MVPA observed in PE classes



Results cont...

- **This reflected an increase ($p's < .01$) in:**
 - **lesson contexts of fitness activities & game play and**
 - **teacher interactions of promoting fitness, & managing**
- **and a decrease ($p's < .01$) in:**
 - **teacher interactions in demonstrating fitness, instructing, & observing**

Discussion

- **SPARK changed PE instruction**
 - resulting in ↑ PA time of CNMI students during PE across grade levels
- **Limitations: no control, no long term follow-up**
- **Future: disseminate to Pacific Islands**
 - expand to students' leisure time PA, long-term PA, & *obesity* effects
- **2015 SPARK recommended primary resource for CNMI K-12 PE curriculum**

Questions?



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