Design, Implementation and Impact of a Park-Based Afterschool Healthy Weight Program in Diverse Youth

Presented by: Sarah E. Messiah, Ph.D., MPH
on behalf of partnership between:
The University of Miami & Miami Dade County Department of Parks, Recreation and Open Spaces Department Collaborative
Five Conditions of Collective Success:

1) a common agenda;
2) shared measurement systems;
3) mutually reinforcing activities;
4) continuous communication; and
5) a backbone support organization.

Results-Based Accountability™
TEAM WORK, TEAM APPROACH

University & Parks collaboration in all phases of:

• Design
• Implementation
• Collection of data
• Interpretation of results
• Dissemination of results
• Scaling up to a Park Rx program

Condition #1: Common agenda
A shared vision for change, one that includes a common understanding of the problem and a joint approach to solving it through agreed upon actions
Our Common Agenda: Childhood Obesity

- Endemic (30% pediatric population; > 50% adult)

- Children from economically disadvantaged households are more likely to be overweight or obese due to lack of access/available
- -quality dietary choices
  -safe places to exercise)

- Ethnic group disparities remain deeply entrenched in the local and national epidemic
Modifiable Cardiovascular Disease Risk Factors

- Abnormal Blood Lipid Levels
- Tobacco
- Hypertension
- Physical Inactivity
- Type II Diabetes
- Obesity
The Power of Parks to Create Healthy Communities

REALITY
- homes/families need help
- pediatricians need help
- hospital based programs unrealistic
  -> emphasis on academics during school day, < on recess, PE

ALSO REALITY
- parks are for everyone (health equity)
- parks are available (accessibility)
- parks are affordable (sustainability)

Parks can be a part of the solution for childhood obesity prevention.
SPARK (Sports, Play & Active Recreation for Kids)

- Evidence Based (NIH funded, 45 publications of effectiveness)
- 400 Page binder of activities
- ≥ 45 minutes of daily physical activity
- Leaders receive ongoing in-service training, evaluation and instructor coaching
- Equipment available for activities
- Follow up support available
EmpowerME4Life - an 8-session healthy living course (Alliance for a Healthier Generation)

- Grounded in the American Heart Association’s scientific recommendations in promoting heart-healthy lifestyles

1. Physically active for 60 minutes each day
2. Drink primarily water, 1 percent or fat free milk, and 100 percent juice with no added sugars
3. Eat fruits and vegetables with EVERY meal
4. Limit screen time to 1-2 hours a day
5. Get ≥ 9 hours of sleep every night
UM faculty and staff trained parks staff in measurement of:

• height & weight
• waist & hip circumference
• skinfold measures (4 sites)
• blood pressure & pulse
• Presidential fitness test
• Knowledge test
Data Collection and Analysis Component

- Web-based data collection program; Data automatically uploaded to UM server from the 30+ parks
- Data housed on UM data servers
- UM/MDPROS faculty analyze data
- UM/MDPROS jointly publish findings

Condition #3: Mutually Reinforcing Activities
“A diverse group of stakeholders working together, not requiring that all participants do the same thing, but encouraging each participant to undertake the specific set of activities at which it excels”
### Participants (> 1 year)

**Mean Age**: 9.3 years, (range 6-14)  
**N = 2,185** (2010-2016)

<table>
<thead>
<tr>
<th>Gender</th>
<th>N (%)</th>
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<tbody>
<tr>
<td>Boys</td>
<td>1,180 (54)</td>
</tr>
<tr>
<td>Girls</td>
<td>1,005 (46)</td>
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</tbody>
</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
<th>N (%)</th>
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</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>1,050 (48)</td>
</tr>
<tr>
<td>Black</td>
<td>1,093 (50)</td>
</tr>
<tr>
<td>White</td>
<td>21 (1)</td>
</tr>
<tr>
<td>Other</td>
<td>21 (1)</td>
</tr>
</tbody>
</table>
Change* in Body Mass Index z score Over 3 Years by Weight Category

*BMI Z Scores Over 3 Years by Weight Category

*Generalized linear mixed models adjusted for age, race-ethnicity, weight category (only for “all”), gender, park-area poverty, and park location

P=<.0001
P=NS
**Change* in Skinfold Thickness (mm) Over 3 Years by Weight Category**

*Generalized linear mixed models adjusted for age, race-ethnicity, weight category, gender, park-area poverty, and park location*

*P*=.001

*All*
Change* in Blood Pressure Percentile Over 3 Years

*Generalized linear mixed models adjusted for age, race-ethnicity, weight category, gender, park-area poverty, and park location
Change* in Cardiovascular Fitness Over 3 Years by Weight Category

*Generalized linear mixed models adjusted for age, race-ethnicity, weight category, gender, park-area poverty, and park location.
**Question**

- Being physically active is only for athletes
- It is healthy to eat fruits/vegetables at every meal
- Fruits & vegetables are full of nutrients & vitamins
- It is good to exercise an hour a day
- Watch TV instead of exercise
- I should limit the amount of TV
- How does being physically active help your body
- Identify the activity that is most physically active
- Identify the bad drink
- Overall Composite

*Generalized linear mixed models adjusted for age, sex, ethnicity, year and park location*
Dissemination of Evidence-Based Findings

• Present Findings at National Meetings
• Publish Findings in the Scientific Literature (peer reviewed)
• Build team by bringing in other local partners (govt. officials, medical establishments)
Every member of the team is valuable

Every Park Rx program needs a champion from each partner organization - MDPROS has SEVERAL local academic/medical champions
SUMMARY of EVIDENCE-BASED RESULTS TO SUPPORT PARK RX

1. Collectively maintained (and improved) healthy weight and body mass index (BMI) throughout the school year
2. Lowered their blood pressure (increased healthy BP)
3. Improved their physical health, fitness levels and knowledge about nutrition and healthy lifestyle behavior
4. Children with disabilities equally benefit
Next Steps: Park Prescription (Rx)

37 Medical Complications of Obesity
Many Now Seen in Childhood

- Pulmonary disease
- Abnormal function
- Obstructive sleep apnea
- Hypoventilation syndrome
- Idiopathic intracranial hypertension
- Stroke
- Cataracts
- Coronary heart disease
- Diabetes
- Dyslipidemia
- Hypertension
- Gall bladder disease
- Severe pancreatitis
- Gynecologic abnormalities
- Abnormal menses
- Infertility
- Polycystic ovarian syndrome
- Osteoarthritis
- Gout
- Nonalcoholic fatty liver disease
- Steatosis
- Steatohepatitis
- Cirrhosis
- Cancer
- Breast, uterus, cervix
- Colon, esophagus, pancreas
- Kidney, prostate
- Phlebitis
- Venous stasis

(Metabolic Syndrome)
Next Steps: Safe Spaces to Recreate for At Risk Youth: Mental Health Benefits of Parks

Y.E.S. YOUTH ENRICHMENT & SPORTS

Provides:
- Safe Place
- Learning & Exploring
- Life Skills to Empower
- Homework Help
- Sports & Fitness
- Health & Wellness
- Fun and Games

Available at 13 Parks in Miami-Dade County • Transportation is Provided • Meals will be Served

Time: 4:00 p.m. to 7:00 p.m. - 5 Days a Week

FIND YOUR PARK BY ZIP CODE ON THE BACK

Sign-Up TODAY!
Contact Eric Hansen
EricH@miamidade.gov
305-755-5460

Miami-Dade Juvenile Service Department
MIAMI-DADE COUNTY
Miam-Dade Parks, Recreation and Open Spaces Department

Miami-Dade County Public Schools
University of Miami Health System
FIU Center for Children and Families
Miami Dade College
FLIPANY
Thank You

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- Alliance for a Healthier Generation
- Florida Surgeon General’s Office