JACK KARDYS

DIRECTOR

Miami-Dade County Parks, Recreation and Open Spaces
BACKGROUND

- One of the greatest healthcare challenges is childhood obesity
- Statistics are staggering
- Overweight or obese kids are likely to be overweight or obese adults
- Poor diet and inactivity are leading causes
- Physical activity is associated with short and long term benefits
HISTORY

- 6 years we began a conversation with University of Miami (Miller School of Medicine)
- Organized working group
  - Researched Best Practices (what others were doing)
- Determined a methodology of program delivery, measures and testing that would substantiate our work
- Identified 5 core curriculum components
AFTERSCHOOL CURRICULUM

- SPARK
- Nutrition Education
- Life Sports
  - SNAG Golf
  - QuickStart Tennis
- Recreation Games
- Homework Help
WHAT MAKES US DIFFERENT

Partnership

UHealth
UNIVERSITY OF MIAMI
MILLER SCHOOL of MEDICINE
WHAT MAKES US DIFFERENT

- Data collected
  - What
  - When
  - Who
  - How
- Vision
THE VISION

Parks Rx 4Health
A Park Prescription for Evidenced Based Programs
IT STARTS IN PARKS!
PARTNERSHIP

Scientific Study to Generate Evidence-Based Findings

Longitudinal cohort study to determine the effect of Fit2Play on preventing overweight and obesity among 5-to-14 (up to 24 years old in disabled sample) year olds in 35 Miami-Dade County parks.

UM faculty and staff trained MDC Parks field staff in measurement of:

- height & weight
- waist & hip circumference
- skinfold measures (4 sites)
- blood pressure
PARTNERSHIP

Scientific Study to Generate Evidence-Based Findings

Data Collection and Analysis Component

- Web-based data collection program; Data automatically uploaded to UM server from the parks
- Data housed on UM data servers
- UM faculty analyze data
- UM/Parks jointly publish findings
### DESCRIPTIVE STATISTICS

Mean Age 8.9 years, (range 5-16)
N=766 (2010-2014)

<table>
<thead>
<tr>
<th>Gender</th>
<th>%</th>
</tr>
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<tbody>
<tr>
<td>Boys</td>
<td>48</td>
</tr>
<tr>
<td>Girls</td>
<td>52</td>
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</table>

<table>
<thead>
<tr>
<th>Ethnicity</th>
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<tbody>
<tr>
<td>Hispanic</td>
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<tr>
<td>Black</td>
<td>43</td>
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<tr>
<td>White</td>
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<td>Other</td>
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## ANTHROPOMETRIC KEY FINDINGS

<table>
<thead>
<tr>
<th></th>
<th>Normal Weight</th>
<th>Overweight</th>
<th>Obese</th>
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<tbody>
<tr>
<td></td>
<td>Pretest (Fall)</td>
<td>Posttest (Spring)</td>
<td>P</td>
</tr>
<tr>
<td>Mean ± se</td>
<td>Mean ± se</td>
<td>Mean ± se</td>
<td>0.01</td>
</tr>
<tr>
<td>BMI z score</td>
<td>-0.1 ± 0.1</td>
<td>0.0 ± 0.1</td>
<td>1.2 ± 0.1</td>
</tr>
<tr>
<td>BMI %ile</td>
<td>51.0 ± 1.9</td>
<td>52.4 ± 1.9</td>
<td>87.0 ± 2.4</td>
</tr>
<tr>
<td>Σ of Skinfolds (mm)</td>
<td>36.5 ± 2.2</td>
<td>35.2 ± 2.2</td>
<td>58.0 ± 2.7</td>
</tr>
</tbody>
</table>

*Generalized linear mixed models adjusted for ethnicity, year and park location*
# BLOOD PRESSURE KEY FINDINGS

<table>
<thead>
<tr>
<th></th>
<th>Pretest (Fall)</th>
<th>Posttest (Spring)</th>
<th>P</th>
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<td>Mean ± se</td>
<td></td>
<td>Mean ± se</td>
<td>Mean ± se</td>
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</tr>
<tr>
<td>Systolic mm Hg</td>
<td>107.8 ± 0.9</td>
<td>106.5 ± 0.9</td>
<td>0.01</td>
<td>112.3 ± 1.2</td>
<td>109.2 ± 1.1</td>
<td>&lt;0.01</td>
<td>115.7 ± 1.0</td>
<td>112.5 ± 1.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Diastolic mm Hg</td>
<td>66.9 ± 0.8</td>
<td>65.1 ± 0.8</td>
<td>&lt;0.01</td>
<td>67.4 ± 1.0</td>
<td>65.1 ± 1.0</td>
<td>&lt;0.01</td>
<td>68.6 ± 0.9</td>
<td>67.1 ± 0.9</td>
<td>0.01</td>
</tr>
<tr>
<td>SBP Pre-HTN</td>
<td>11.7 ± 3.2</td>
<td>7.5 ± 2.3</td>
<td>0.03</td>
<td>9.3 ± 3.5</td>
<td>7.8 ± 3.1</td>
<td>0.66</td>
<td>14.4 ± 4.3</td>
<td>10.4 ± 3.4</td>
<td>0.23</td>
</tr>
<tr>
<td>SBP HTN</td>
<td>12.4 ± 2.7</td>
<td>10.1 ± 2.3</td>
<td>0.28</td>
<td>27.9 ± 6.1</td>
<td>14.1 ± 4.1</td>
<td>0.01</td>
<td>36.8 ± 6.1</td>
<td>26.0 ± 5.2</td>
<td>0.03</td>
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<tr>
<td>SBP normal</td>
<td>75.2 ± 4.1</td>
<td>82.2 ± 3.3</td>
<td>0.01</td>
<td>61.3 ± 6.8</td>
<td>78.0 ± 5.2</td>
<td>0.01</td>
<td>45.9 ± 6.2</td>
<td>62.1 ± 6.0</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>DBP Pre-HTN</td>
<td>7.0 ± 2.3</td>
<td>6.0 ± 2.1</td>
<td>0.52</td>
<td>9.7 ± 3.7</td>
<td>5.0 ± 2.3</td>
<td>0.13</td>
<td>8.3 ± 3.0</td>
<td>7.6 ± 2.9</td>
<td>0.76</td>
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<td>DBP HTN</td>
<td>6.7 ± 2.2</td>
<td>4.2 ± 1.5</td>
<td>0.05</td>
<td>5.9 ± 2.6</td>
<td>4.2 ± 2.0</td>
<td>0.47</td>
<td>8.8 ± 3.2</td>
<td>5.0 ± 2.1</td>
<td>0.09</td>
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<tr>
<td>DBP normal</td>
<td>84.7 ± 3.3</td>
<td>88.9 ± 2.6</td>
<td>0.05</td>
<td>82.8 ± 4.7</td>
<td>90.2 ± 3.3</td>
<td>0.08</td>
<td>80.6 ± 4.6</td>
<td>86.4 ± 3.7</td>
<td>0.12</td>
</tr>
</tbody>
</table>

*Generalized linear mixed models adjusted for ethnicity, year and park location*
## PHYSICAL FITNESS KEY FINDINGS

<table>
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<tr>
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<th>Pretest (Fall)</th>
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<td></td>
<td>Mean ± se</td>
<td>Mean ± se</td>
<td></td>
</tr>
<tr>
<td>Sit-ups (#)</td>
<td>21.0 ± 1.4</td>
<td>24.5 ± 1.6</td>
<td>&lt;0.01</td>
<td>21.0 ± 1.7</td>
<td>24.3 ± 1.8</td>
<td>&lt;0.01</td>
<td>19.6 ± 1.4</td>
<td>22.9 ± 1.6</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Push-ups (#)</td>
<td>18.5 ± 1.3</td>
<td>22.0 ± 1.5</td>
<td>&lt;0.01</td>
<td>17.4 ± 1.7</td>
<td>21.8 ± 1.9</td>
<td>&lt;0.01</td>
<td>14.9 ± 1.3</td>
<td>18.7 ± 1.5</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Pacer Test (laps)</td>
<td>13.5 ± 1.5</td>
<td>15.5 ± 1.7</td>
<td>&lt;0.01</td>
<td>12.9 ± 1.5</td>
<td>13.5 ± 1.6</td>
<td>0.37</td>
<td>10.7 ± 1.2</td>
<td>12.7 ± 1.4</td>
<td>&lt;0.01</td>
</tr>
<tr>
<td>Sit &amp; reach (in)</td>
<td>27.4 ± 0.7</td>
<td>27.3 ± 0.6</td>
<td>0.493</td>
<td>26.9 ± 0.9</td>
<td>26.9 ± 0.8</td>
<td>0.93</td>
<td>26.0 ± 0.8</td>
<td>25.7 ± 0.7</td>
<td>0.44</td>
</tr>
<tr>
<td>Run time (sec)</td>
<td>146.5 ± 16.6</td>
<td>133.2 ± 16.5</td>
<td>&lt;0.01</td>
<td>149.8 ± 18.2</td>
<td>134.2 ± 17.7</td>
<td>0.02</td>
<td>173.3 ± 17.3</td>
<td>160.9 ± 16.9</td>
<td>0.02</td>
</tr>
</tbody>
</table>

*Generalized linear mixed models adjusted for age, sex, ethnicity, year and park location
**HEALTH AND WELLNESS FINDINGS**

**NUTRITION EDUCATION 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**

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<td>Mean ± se</td>
<td></td>
<td>Mean ± se</td>
<td>Mean ± se</td>
<td></td>
</tr>
<tr>
<td>Total # correct</td>
<td>6.9 ± 0.2</td>
<td>&lt;0.001</td>
<td>6.6 ± 0.3</td>
<td>8.1 ± 0.3</td>
<td>&lt;0.001</td>
<td>7.1 ± 0.3</td>
<td>8.1 ± 0.2</td>
<td>&lt;0.001</td>
</tr>
</tbody>
</table>

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NATIONALLY RECOGNIZED


LESSONS LEARNED

- Every member of the team is valuable
- Communication is key
- No study is perfect
- Effort is for the greater good (children’s health)
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

THE POWER OF PARKS TO CREATE HEALTHIER COMMUNITIES
Fit2Play® Families: Parks Rx 4Health

- a treatment alternative to overweight / obese / inactive patients (youth and adults)
- or a preventative option for patients that show signs....

Youth Rx Patients
Fit2Play® Afterschool Program: an evidenced based curriculum that includes:
- 45 minutes physical activity daily
- Nutrition lessons)
- LifeSports
- Recreation Games

University of Miami Miller School of Medicine collects pre and post measures and provides an ongoing analysis to determine treatment effectiveness. Measures include:
- Height
- Blood Pressure
- Skinfold measures
- Timed Sit-ups
- 400 meter run

Weight
- Heart Rate
- Hip and Waist circumference
- Timed Push-ups
- Sit and Reach

Adult Rx Patients
- Walk for Life (self-directed program)
- Yoga
- Zumba
- Tai Chi
- EnhanceFitness (low impact aerobic exercise)
- Outdoor exercise

NEXT STEPS: PARKS RX 4HEALTH
PARKS RX 4HEALTH
A Park Prescription Program through pediatric offices
UHEALTH PEDIATRICS
MEDICAL CAMPUS

UHealth Primary Care
Your doctors for life
PARKS RX 4HEALTH

- Parks near our families
- Data driven tracking of zip codes with kids most at risk for obesity
PARKS RX 4HEALTH
PARKS RX 4HEALTH PROCESS

FIT2PLAY® UMMSM Rx 4Health Process

Pediatric RX

Doctor Visit RX

Pediatrician

RX Landing Page

Web Based Form

Register For Program

Completed form Email

Health and Wellness Office

Staff will respond to Parent within 24 hours
Will establish and maintain a patient log to cross check with Pediatrician
Assist Parent with Program Registration

Health and Wellness Office

Staff will track program participation
Collect attendance, performance and bio-metric results
Report measures every 3 months to Pediatrician
Load pre-test and post-test results into database

Forward Measures to Pediatrician

University of Miami

FIT2Play® Bio-Metric Database

Measures every 3 months