Contributions of Public Parks to Physical Activity and Health: Recent Findings and Research Needs

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Quarterly Meeting
Consortium to Lower Obesity in Chicago Children

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Aims of the Presentation

• Highlight recent research evidence related to park-based physical activity in low income and minority communities;

• Review evidence on disparities in availability of parks and recreation facilities;

• Highlight research needs related to park-based physical activity for low income and minority communities.
2/3 of US adults and 1/3 of children are overweight or obese.
Part of the problem: Most Americans are not active in their leisure time and this varies by ethnicity.

Barnes, P. Physical activity among adults, United States, 2000-2005
The problem may be worse...objective measures (accelerometers) show a larger problem.

Only 42% of children age 6 – 11 get 60 min. of daily physical activity.

Close to 200,000 annual deaths can be attributed to inactivity.
Are public parks part of the “inactivity-obesity” solution?

- Parks exist at all levels of government and in special park districts (Godbey et al., 2005).
- 20,000 parks in the US; and 10,000+ playgrounds (Mowen, 2010).
- 75% of American households are within 2 miles of a park system (Mowen & Kaczynski, 2008).
Parks and recreation areas increase opportunities for physical activity.

- **Girls living within 1-mile radius of parks get 35 more minutes of MVPA** than girls farther away.
- **Community and neighborhood parks were associated with 24 additional min.**

Availability of recreation facilities is associated with MVPA and weight status.

Parks, Playgrounds and Active Living

Introduction

Regular physical activity increases longevity, well-being, helps children and adults maintain a healthy weight, and can reduce the risk for obesity and its related health consequences. Parks and playgrounds provide a wide variety of opportunities for physical activity and have the potential to help many Americans...
Key Findings

1. The majority of Americans use local parks.

2. Proximity is related to park use and activity.

3. More parks and park area is related to park use.

4. Disparities limit opportunities for physical activity.

5. Trails, playgrounds, and sport facilities increase activity.

6. Aesthetic, condition, and safety are related to use.

7. Organized programs may increase activity.

8. Renovations can increase facilities use and vigorous activity.
Systematic Observations in 18 Chicago Parks: May – June, 2005

Walking (Moderate) 4 or 40%
Vigorous 3 or 30%
Sedentary 3 or 30%

Percent agreement: 79% -- 97%.
Study Parks Selection

% race/ethnic composition of census tracts:

Black: 60 – 99
White: 53 – 84
Hispanic: 70 – 93

Legend
- Census Block
- Buffer
- Selected Parks
Levels of Physical Activity in Tampa and Chicago Parks

Levels of Physical Activity by Park

- **Abbott**: 71.6% Active, 28.4% Sedentary
- **Avalon**: 19.3% Active, 80.7% Sedentary
- **Calumet**: 30.8% Active, 69.2% Sedentary
- **Foster**: 53.5% Active, 46.5% Sedentary
- **Hamilton**: 35.2% Active, 64.8% Sedentary
- **Harrison**: 60.1% Active, 39.9% Sedentary
- **Horner**: 60.1% Active, 39.9% Sedentary
- **Humboldt**: 52.5% Active, 47.5% Sedentary
Levels of Physical Activity by Park

<table>
<thead>
<tr>
<th>Park</th>
<th>Active</th>
<th>Sedentary</th>
</tr>
</thead>
<tbody>
<tr>
<td>LaFollette</td>
<td>54.9</td>
<td>45.1</td>
</tr>
<tr>
<td>Mann</td>
<td>30.9</td>
<td>69.1</td>
</tr>
<tr>
<td>McKinley</td>
<td>60.5</td>
<td>39.5</td>
</tr>
<tr>
<td>Riis</td>
<td>62.2</td>
<td>37.8</td>
</tr>
<tr>
<td>River</td>
<td>55.4</td>
<td>44.6</td>
</tr>
<tr>
<td>Rowan</td>
<td>49.6</td>
<td>50.4</td>
</tr>
<tr>
<td>Tuley</td>
<td>71.7</td>
<td>28.3</td>
</tr>
</tbody>
</table>
How were Chicago parks used, by age group?

Use of Activity Areas by Age Group (%), N=2,330

- Baseball Playground
- Soccer
- Tennis
- Basketball
- Sprayground
- Open Space
- Paths
- Volleyball

Children: 39.8% (Baseball), 71.6% (Soccer), 30.9% (Tennis), 19.2% (Basketball), 22.3% (Sprayground), 60% (Open Space), 28.4% (Paths), 16.9% (Volleyball)

Adults: 60.2% (Baseball), 28.4% (Soccer), 69.1% (Tennis), 80.8% (Basketball), 77.7% (Sprayground), 40% (Open Space), 71.6% (Paths), 83.1% (Volleyball)
How were Chicago parks used, by activity?

Use of Selected Activity Areas
(Frequency)  N= 2,330

Number of Park Users

Baseball    800
Playground   600
Soccer       500
Tennis        200
Basketball    100
Sprayground   100
Open Space    50
Paths         5
Volleyball     0
How did Chicago parks contribute to MVPA?

Percent Moderate-to-Vigorous Physical Activity in Selected Activity Zones in 18 Parks (N=2,330)
Parks and recreation areas are beneficial, but...

- Are they equally available? It depends...
- What evidence do we have? Not much.

Humboldt Park/Chicago, 2005
Residents and children and youth of Los Angeles who are Latino or African American have less access to park acreage.


<table>
<thead>
<tr>
<th>Race/Ethnic %</th>
<th>Park acreage per 1000 adults</th>
<th>children</th>
</tr>
</thead>
<tbody>
<tr>
<td>75% Latino</td>
<td>0.6</td>
<td>5</td>
</tr>
<tr>
<td>75% Black</td>
<td>1.7</td>
<td>2.9</td>
</tr>
<tr>
<td>75% White</td>
<td>31.8</td>
<td>95.7</td>
</tr>
</tbody>
</table>
Recreation **facilities** are less available... .

Percent of census tracts without a **recreational facility** park by race/ethnicity

<table>
<thead>
<tr>
<th>Race/Ethnicity</th>
<th>Percent</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hispanic</td>
<td>81.4</td>
</tr>
<tr>
<td>Black/Hispanic</td>
<td>79.4</td>
</tr>
<tr>
<td>Black</td>
<td>69.6</td>
</tr>
<tr>
<td>Mixed</td>
<td>57.3</td>
</tr>
<tr>
<td>White</td>
<td>38.4</td>
</tr>
</tbody>
</table>

...parks are more equitably distributed.

Private recreation facilities and public parks are more equally distributed.

Mean number of parks per block group by race and income

Access to safe playgrounds in Boston varies by neighborhood race and youth poverty.

- Cradock et al. examined 154 playgrounds (geo-coded and rated for safety).
  - Increased proportion of black residents was associated with decreased safety.
  - Increased proportion of youth living in poverty was associated with increased distance to playgrounds.
National studies link racial/income to availability of recreation facilities.


• **Measured number of PA facilities within 8km of 20,745 adolescents in the US**

• **Higher SES block groups had significantly greater odds of having 1 or more facilities.**

• **Low SES and minority block groups less likely to have 1 or more facilities.**
Availability of commercial physical activity facilities in 28,000 US zipcodes.

4 types of facilities were less likely in “minority zipcodes.”

Research Needs

• Crime, safety perceptions, and park condition influence on park use and PA opportunities.

• More studies on disparities in access to parks and how this influences PA and health outcomes.

• Evaluation of marketing campaigns to increase active park visits.

• Longer term, quasi-experimental designs to evaluate effects of renovations and improvements.

• Evaluation of community partnerships (e.g., joint-use) on facility use and physical activity.
Conclusions

• Parks and recreation environments can promote physical activity in communities.

• Research on specific environmental factors associated with activity is emerging.

• More evidence is needed on the nature of disparities in access to parks.

• Investments in public recreation and parks is important to public health.
Thank You!

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