

bridging the gap

Research Informing Policies & Practices
for Healthy Youth

The Landscape of Local and Regional Public Parks in the U.S.

2013 APA National Planning Conference
Chicago, IL, April 14, 2013

Christopher M. Quinn, Sandy J. Slater, Lisa Nicholson

Research Background

- Some previous studies have found differences in neighborhood park and sports facility access by SES and race/ethnicity, but others have not.
- Much of the literature based on single-community studies or local/regional comparisons
- Reliance on GIS measures (fewer direct observation studies)
- Specific park features (e.g., trails) may be more associated with physical activity in parks



bridging the gap

Methods

Park Sample

- Secondary data from Navteq, TeleAtlas, USGS obtained, linked to study areas using ArcGIS
 - Public Local, Regional, and County parks and beaches retained as eligible
 - Random sample if above minimum
- Additional parks discovered and observed while in the community
- 154 communities across 42 states in 2010
- 157 communities across 41 states in 2011

Field observations

- 110-item audit tool developed
- Park attributes, sports features (e.g., courts, fields, playgrounds), lighting, amenities, (e.g., shelters, picnic tables, green space, grills, trail), litter and other quality concerns

bridging the gap

PARK ID :		COMPLETION CODE	
PARK NAME:		COMPLETED	<input type="checkbox"/> 01
ADDRESS:		PARTIALLY COMPLETED – CODE DISPOSITION	<input type="checkbox"/> 02
DATE ____-____-2011 STAFF 1 ____ STAFF 2 ____		NOT STARTED – CODE DISPOSITION	<input type="checkbox"/> 03
START TIME ____:____:____ AM/PM END TIME ____:____:____ AM/PM		NOT ELIGIBLE – CODE DISPOSITION	<input type="checkbox"/> 96
PARK SAMPLE ATTRIBUTE		DISPOSITION CODE	
NO	YES	Temporarily not accessible	<input type="checkbox"/> 1
Park replaces a primary sample observation	<input type="checkbox"/> 0 <input type="checkbox"/> 1	Not safe	<input type="checkbox"/> 2
NOTES:		Asked to leave	<input type="checkbox"/> 3
		Ran out of time	<input type="checkbox"/> 4
		Address not found	<input type="checkbox"/> 5
		Does not meet study criteria	<input type="checkbox"/> 7
		Permanently closed	<input type="checkbox"/> 8
		Other (SPECIFY):	<input type="checkbox"/> 6

A. SETTING, PARKING AND AMENITIES

A1. Setting		A3. Does the park have...?		NO	YES
a. What type of setting is this?		a. Closing Time Signage		<input type="checkbox"/> 0	<input type="checkbox"/> 1
Public Park	<input type="checkbox"/> 01	b. Restrooms/Port-o-lets		<input type="checkbox"/> 0	<input type="checkbox"/> 1
School Grounds	<input type="checkbox"/> 06	c. Showers/Locker Rooms		<input type="checkbox"/> 0	<input type="checkbox"/> 1
Other, SPECIFY:	<input type="checkbox"/> 08	d. Beverage Vending Machines		<input type="checkbox"/> 0	<input type="checkbox"/> 1
COULD NOT ASCERTAIN	<input type="checkbox"/> 98	1.Plain Bottled Water		<input type="checkbox"/> 0	<input type="checkbox"/> 1
b. Is the area adjacent to a school?	<input type="checkbox"/> 0 <input type="checkbox"/> 1	2. 100% Juice		<input type="checkbox"/> 0	<input type="checkbox"/> 1
A2. Does the park have...?		3. Regular Soda		<input type="checkbox"/> 0	<input type="checkbox"/> 1
a. Parking On-Site	<input type="checkbox"/> 0 <input type="checkbox"/> 1	4. Diet Soda		<input type="checkbox"/> 0	<input type="checkbox"/> 1
1. Lighted Parking	<input type="checkbox"/> 0 <input type="checkbox"/> 1	5. Other Sweetened Drinks		<input type="checkbox"/> 0	<input type="checkbox"/> 1
IF A2a=0, LEAVE BLANK		A4. Is there an entrance fee?		<input type="checkbox"/> 0	<input type="checkbox"/> 1
b. Sidewalk on street leading to entrance	<input type="checkbox"/> 0 <input type="checkbox"/> 1	A5. Access signage and barriers to entry		NO	YES
1. Sidewalk Lighting	<input type="checkbox"/> 0 <input type="checkbox"/> 1	a. Signage indicates park/school name		<input type="checkbox"/> 0	<input type="checkbox"/> 1
IF A2b=0, LEAVE BLANK		b. Signage states use of area is limited to specific hours/period of day		<input type="checkbox"/> 0	<input type="checkbox"/> 1
c. Bicycle Parking	<input type="checkbox"/> 0 <input type="checkbox"/> 1	c. Signage states area is private or restricted access at all times		<input type="checkbox"/> 0	<input type="checkbox"/> 1
		d. Locked fence around the perimeter or other physical barrier prevents public access		<input type="checkbox"/> 0	<input type="checkbox"/> 1

B. SPORTS FEATURES

FOR EACH FEATURE BELOW, COMPLETE ITEM B1 IF B1 TOTAL >0, COMPLETE B2 AND B3	B1. How Many?		B2. Condition of Feature – How many in each?				B3. Does the Feature have Lighting?	
	TALLY	TOTAL	1. POOR		2. OK/GOOD		NO	YES
			TALLY	TOTAL	TALLY	TOTAL		
a. Field, Multi-use							<input type="checkbox"/> 0	<input type="checkbox"/> 1
b. Field, Football							<input type="checkbox"/> 0	<input type="checkbox"/> 1
c. Field, Baseball							<input type="checkbox"/> 0	<input type="checkbox"/> 1
d. Field, Soccer							<input type="checkbox"/> 0	<input type="checkbox"/> 1
e. Court, Basketball							<input type="checkbox"/> 0	<input type="checkbox"/> 1
f. Court, Tennis							<input type="checkbox"/> 0	<input type="checkbox"/> 1
g. Court, Volleyball							<input type="checkbox"/> 0	<input type="checkbox"/> 1
i. Court, Multi-use							<input type="checkbox"/> 0	<input type="checkbox"/> 1
m. Running /Walking Track							<input type="checkbox"/> 0	<input type="checkbox"/> 1
n. Pool (> 3ft deep)							<input type="checkbox"/> 0	<input type="checkbox"/> 1
o. Wading Pool / Spray Grounds							<input type="checkbox"/> 0	<input type="checkbox"/> 1
p. Playground Area							<input type="checkbox"/> 0	<input type="checkbox"/> 1
q. Skateboarding Facilities							<input type="checkbox"/> 0	<input type="checkbox"/> 1
r. Exercise Stations w/signage							<input type="checkbox"/> 0	<input type="checkbox"/> 1
s. Exercise Stations w/o signage							<input type="checkbox"/> 0	<input type="checkbox"/> 1
t. Rock Climbing Wall							<input type="checkbox"/> 0	<input type="checkbox"/> 1

Methods

Community Park Measures

- Density measures (parks and features per 10,000 capita and 10 square miles)
- Proportion of parks with a specific feature or amenity in the community

Demographic measures

- Median household income
- Racial/ethnic composition
- Census region



bridging the gap

Results

- 984 eligible parks observed in 2010
- 995 eligible parks observed in 2011
- ➔ 19 of 311 communities (6.1%) had no local parks

Predominantly white, rural, lower income, and southern



Overall

- Mean park density: 2.4 parks /10,000 capita/10 sq mi. (range 0-55.7)
 - Playing court density: 3.1 (0-67.2)
 - Playing field density: 2.8 (0-198.2)
 - All sports feature density 8.5 (0-288.4)
 - Amenities density: 11.0 (0-215.0)
- ➔ Median density for parks, courts, fields, and playgrounds all around 0.5

bridging the gap

Results – by Income

Variable	Lower Income	Higher Income	p-value
Density Measures			
Parks	2.3	2.5	.8047
Playing courts	2.7	3.4	.4257
Playing fields	1.7	4.0	.0894
Overall sports features	6.6	10.3	.1463
Overall park amenities	12.0	10.1	.5219
Proportion Measures			
Lighting for any sports feature(s)	.49	.35	.0006
Sidewalk outside park entrance	.45	.50	.1908
Bicycle parking	.19	.27	.0060
Trail	.29	.37	.0113

Results – by Race/Ethnicity

Variable	≥ 66% White	≥ 50% Black	≥ 50% Hispanic	Other Makeup	p-value
Density Measures					
Parks	1.3	3.7	10.8	3.2	.0000
Playing courts	1.6	7.4	9.2	4.9	.0000
Playing fields	1.7	4.5	4.0	5.7	.0988
Overall sports features	4.6	19.0	21.5	14.5	.0002
Overall park amenities	6.2	19.4	42.3	15.6	<.0001
Proportion Measures					
Lighting for any sports feature(s)	.38	.40	.57	.53	.0088
Sidewalk outside park entrance	.39	.63	.86	.61	.0000
Bicycle Parking	.21	.26	.24	.27	.3227
Trail	.31	.30	.41	.37	.3120

bridging the gap

Results – by Census Region

Variable	Northeast	South	Midwest	West	p-value
Density Measures					
Parks	3.6	1.3	1.5	4.0	.0089
Playing courts	4.0	1.6	2.7	5.0	.0286
Playing fields	3.4	1.5	2.6	5.1	.2993
Overall sports features	10.9	4.5	7.2	14.5	.0366
Overall park amenities	15.2	6.5	8.2	18.2	.0121
Proportion Measures					
Lighting for any sports feature(s)	.28	.49	.43	.43	.0003
Sidewalk outside park entrance	.46	.38	.44	.72	.0000
Bicycle Parking	.25	.21	.24	.23	.7765
Trail	.27	.33	.34	.39	.1792

bridging the gap

Results – Drinking Fountain Availability

Overall, 4 in 10 parks had a drinking fountain

By Income	Lower	Higher	p
Drinking fountain	.39	.40	.8336

By Race/Ethnicity	White	Black	Hispanic	Other	p
Drinking fountain	.37	.48	.51	.44	.0213

By Region	Northeast	South	Midwest	West	p
Drinking fountain	.27	.39	.35	.51	.0008

➔ After controlling for urbanization, there were no significant racial/ethnic differences.

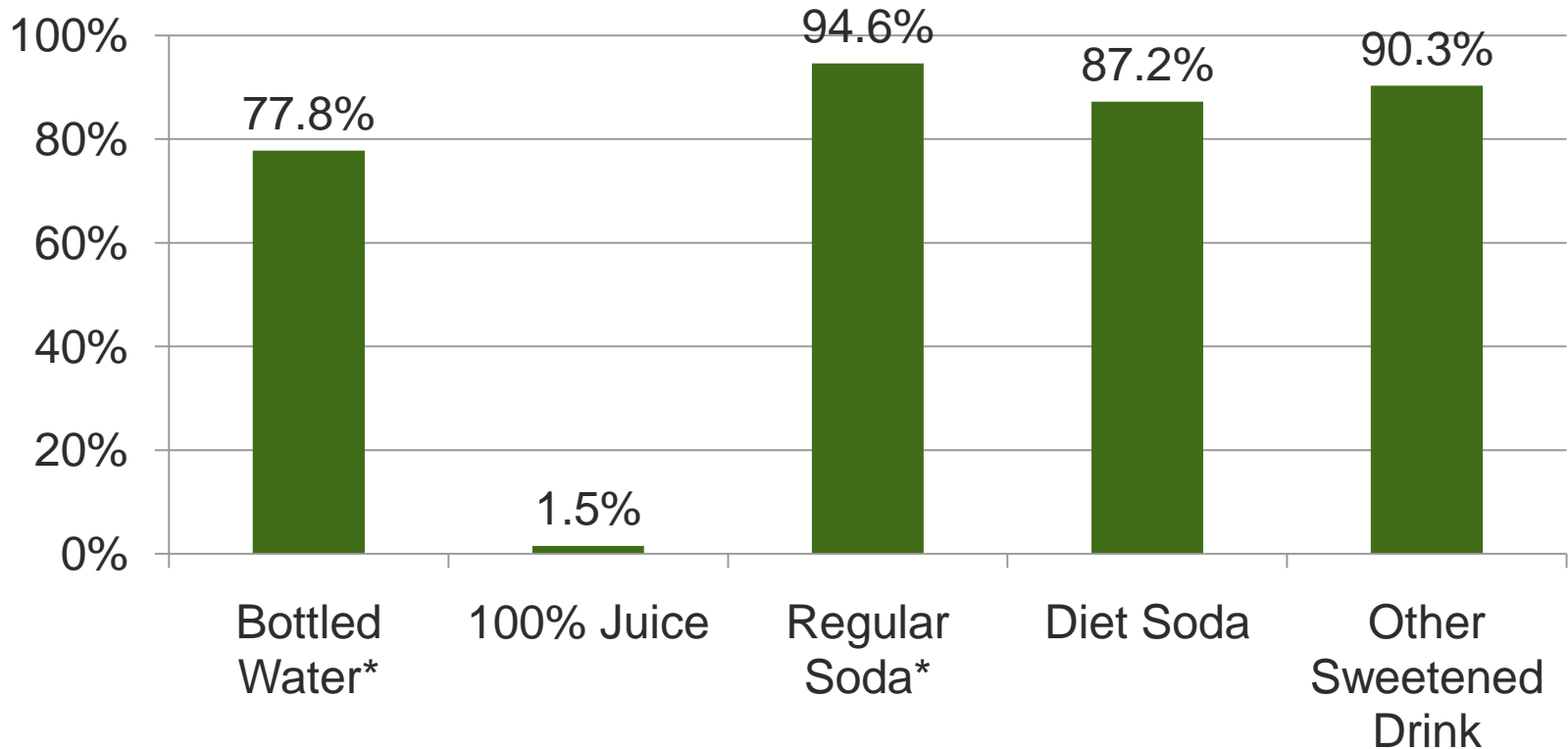
Region differences remained significant.

bridging the gap

Results - Beverage Vending Machines Offerings

➔ 84 parks (4.5%) had a vending machine with beverages

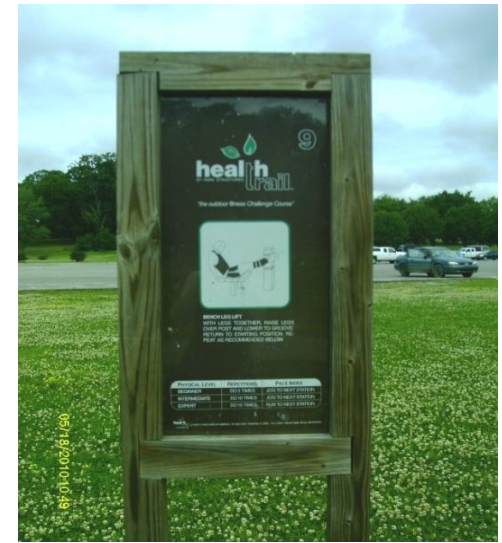
Beverage Availability in Vending Machines



* Significantly different at $p < .01$

Discussion

- **Income:** No differences in park or feature density
 - Marginally significant difference in density of playing fields
 - A significantly higher proportion of parks in higher income communities had a trail and bicycle parking, whereas more parks in lower income communities had any lighting for sports features
- **Race/Ethnicity:** Majority black and Hispanic/Latino communities have higher density of parks and playing courts
 - A higher proportion of parks in majority Hispanic communities had any lighting
 - More parks in majority Black and Hispanic communities had a sidewalk on the street at the park entrance



Discussion

- **Region:** West and Northeast region communities had higher park and feature density
 - There was also a marginally significant increase in park amenity density
 - More parks in west region communities had a sidewalk on the street at park entrance
 - 50% of parks in west region had a drinking fountain, more than in other parts of the country
- Most parks lacked a drinking fountain.
- While relatively few parks contain vending machines, regular soda is more readily available at parks with vending machines than bottled water.



Conclusions and Future Research

- Our results suggest that disparities in overall park access by SES and race/ethnicity are not as operating in the directions previously thought.
 - Racial/ethnic minority communities may actually have greater access to parks and sports features
- Researchers and planners need to think about the entire park environment, from pedestrian and bicyclist access, to features and amenities.
- Future BTG research will
 - Examine differences in quality and condition of parks
 - Identify the effect of policy markers and provisions for recreation spaces on the prevalence of parks and trails
 - Measure the association between aspects of the community park environment and adolescent physical activity levels

Thank You!

Acknowledgements

We'd like to thank Kevin Gibbs, MUPP; Adam Jentleson, MUPP; Haytham Abu Zayd, MUPP; and the numerous student research assistants and field data collectors who contributed to this project.

email : cquinn5@uic.edu | bridgingthegapresearch.org

bridging the gap