

*'Active Leisure Deserts'?*  
*Assessing the Physical Activity Resource Environment in*  
*Underserved Ethnic Minority Neighborhoods*

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**Abstract**

We assessed racial/ethnic disparities in active leisure opportunities by conducting an inventory of community physical activity facilities in two geographically distinct areas of Los Angeles. The predominantly white affluent area had had a greater proportion of facilities that were commercial, open seven days a week, rated very clean, and adult-oriented than the predominantly African-American less affluent area. African Americans appear to have less access to physical activity opportunities, although less conventional physical activity resources, e.g., faith-based programming, may be underappreciated.

**Introduction**

African Americans are less physically active than whites, despite their higher rates of walking for transportation.<sup>1, 2,3</sup> Recreational resource environments vary across neighborhoods by race/ethnicity and income, affecting health behaviors and outcomes.<sup>4, 5, 6, 7</sup> These variations could be conceptualized as “active leisure deserts” combining previous concepts of “active living” as established by American scholars studying physical activity levels with that of “food deserts” which British scholars identified in their cities under-served by local grocery stores.<sup>8,9</sup> Further investigation of the quality of

neighborhood physical activity resources are needed to guide intervention efforts in identifying promising avenues for lifestyle change.<sup>10, 11</sup>

## **METHODS**

Community Health Councils, Inc. (CHC) was awarded a CDC Racial and Ethnic Approaches to Community Health (REACH) grant in 1999.<sup>12</sup> The project area consists of nineteen zip codes with a high proportion of African Americans (39.6% on average), compared to a very low percentage in a six-zip code comparison area (8.0%).

The sample frame was 378 project area sites (1 per 2317 persons) and 149 comparison area sites (1 per 1490 persons) derived from field investigation of facility sites and calculated from US Census population figures. Nine community organizations and four University of Southern California graduate students completed surveys for 119 project area sites and 35 comparison area sites (31% vs. 23% surveyed). Thirty-one questions from a \_\_\_-item inventory instrument covered types and operation of facilities, people using the facility and programs available for specific populations.

We over-sampled project area sites and used sampling weights and standard errors reflecting the zip code cluster sampling survey design (Stata version 9, College Station, Texas) to yield representative estimates of the features under study, using all of the data. Bivariate significance tests utilized chi-square tests and F-tests reflecting the survey design. All statistical analyses were performed using STATA (version 9) or SAS software, version 8.0 (SAS, Inc., Research Triangle Park, NC).

## RESULTS

Almost two-thirds of *project area sites* were publicly owned, versus fewer than half in the comparison area (see Table 1). The majority of the private facilities in the project area were associated with non-profit organizations, e.g., churches and senior centers, while almost all comparison area sites were for-profit businesses. A greater percentage of project area sites had outdoor facilities than in the comparison area (75.4% vs. 36.4%,  $p < .0001$ ), while they had similar proportions of indoor facilities.

Even after controlling for income and age, facilities that were open for 8 or more hours on at least one workday per week were found less often in the Project area than in the Comparison area (73.0% vs 96.5%,  $\beta = -1.18$ , 95% CI: -2.16, -0.21). Comparison area outdoor facilities were marginally more likely to be perceived as very clean than those in the project area (83.4% vs. 60.2%,  $p = 0.07$ ), but cleanliness of indoor facilities were rated similarly.

Proportions of outdoor facilities, including basketball courts, children's play equipment, baseball diamonds and outdoor swimming pools were similar in both areas. A greater proportion of project area sites had indoor basketball courts (49.9% vs. 20.6%,  $p = 0.015$ ), but the areas offered comparable access to indoor exercise equipment and play equipment.

Demographically, African American-dominant groups comprised 42.1% of those using project area facilities, but no African American-dominant groups were observed using comparison area facilities. Organized physical activity programs for youth were common in both areas (76.1% vs 83.2%); however, fewer programs targeting adults were found in the project area (50.0% vs. 73.8%--adults,  $p = 0.049$ ; ).

## DISCUSSION

Fewer, less varied, less available, and lower quality recreational facilities were present in the project area than in the comparison area overall, with the exception of basketball courts. Given the unpredictability of and ever-increasing demands on public funding and the fragility of private non-profit institutions, the heavier reliance of the project area on publicly funded physical activity resources makes the continued availability of these resources problematic. The project area age distribution is younger than that of the comparison area (27.9 years vs 34.5 years), which may explain the smaller disparity in youth than in adult services. Residents in underserved communities may be trying to fill this gap in commercial and public facilities by creating programs in unconventional sites, such as churches and senior centers, as suggested by the relatively high proportion of nonprofit facilities in the project area. These non-profit sector resources are less visible in environmental assessments utilizing national databases.<sup>7</sup>

The study's primary limitations are that sampling physical activity sites beyond available commercial facility lists will likely miss some hidden facilities and data were collected by a variety of community members from different community-based organizations and by students without the resources for inter-rater reliability testing.

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## TABLES

Table 1: Physical Activity Resource Ownership, Use and Appearance in Project and Comparison Areas

	% in Project Area	% in Comparison Area	Comparison statistic
Ownership Type of Sample <sup>1</sup>	(n = 364)	(n = 149)	
Public	62%	36%	$\chi^2(1) = 28.5, p < .0001$
Private For Profit	12%	41%	$\chi^2(1) = 54.1, p < .0001$
Ownership Type of Surveyed	(n = 119)	(n = 35)	
Public	63%	40%	$\chi^2(1) = 5.9, p = .015$
Private For Profit	11%	40%	$\chi^2(1) = 15.8, p < .0001$
Race/ethnicity, (outdoor)	(n = 83)	(n = 13)	
African American	42.1%	0.0	$F(1,24) = 3.33, p = .08$
White	0.0	29.8%	$F(1,24) = 40.4, p < .001$
Outdoor Appearance	(n = 83)	(n = 13)	
Very clean	60.2%	83.4%	$F(1,24) = 3.57, p = .071$
Availability	(n = 102)	(n = 35)	
Outdoor	75.4%	36.4%	$F(1,25) = 15.68, p = .0005$

Indoor	80.3%	82.2%	$F(1,25) = 0.034, p=.86$
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1. Zip code 90047 is not included in these percentages due to a data problem;  
"Ownership type" prevalence estimates were unweighted.
2. Note. All prevalence estimates were weighted to reflect the survey design,  
except for "Ownership type." Standard errors reflect the clustering of sites within  
zipcodes.

Table 2: Physical Activity Resource Availability in Project and Comparison Areas for Adults and Children

	% in Project Area	% in Comparison Area	Comparison statistic
Outdoor Options	(n = 83)	(n = 13)	
Basketball courts	79.7	84.3	F(1,25) = 0.23, p=.64
Football/soccer fields	24.0	11.4	F(1,25) = 0.59, p=.45
Children's Equipment	79.7	93.5	F(1,24) = 1.78, p=.19
Indoor Options	(n = 70)	(n = 29)	
Basketball/Gymnasium	49.9	20.6	F(1,25) = 6.87, p=.015
Dance/Aerobic floor	53.4	63.6	F(1,25) = 0.48, p=.50
Swimming Pools	8.3	21.8	F(1,25) = 2.39, p=.13
Open days and times	(n = 96)	(n=29)	
7 days per week	42.1	57.3	F(1,25) = 1.29, p=.27
8 hours or more / day	73.0	96.5	F(1,25) = 8.43, p=.008
Programs by age groups	(n = 102)	(n = 35)	
Youth	76.1	83.2	F(1,25) = 0.35, p=.56

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Adults	50.0	73.8	F(1,24) = 4.29, p=.049
Elderly	24.5	42.9	F(1,24) = 0.89, p=.36

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1. Note. All prevalence estimates were weighted to reflect the survey design.

Standard errors reflect the clustering of sites within zipcodes.