# Effects of Poverty on Park Use in Southern California

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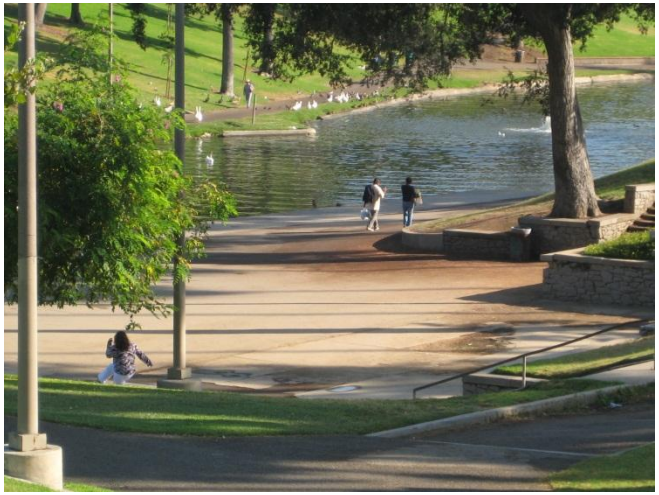
# Background

- Park size and accessibility often varies by neighborhood socio-economic status.
- Given equal access, are neighborhood socio-demographics associated with park use and park-based physical activity?



# Objectives

- To determine the impact of neighborhood poverty level on:
  - park use
  - park-based physical activity
  - perceptions of park safety


# Methods

- We studied a sample of 50 parks in Southern California serving a wide diversity of racial/ethnic groups and income levels.
- We calculated the percentage of households living in poverty level within a 1-mile radius around the park.
- Observed park use using SOPARC (System for Observing Play and Leisure Activity in Communities) for 7 days, 4 times/day.
- In each park we surveyed 75 park users and 75 local residents, stratified by distance from the parks: 1/3 from each of 3 buffers: within ¼ mile, ¼-½ mile, and ½-1 mile.
- We surveyed and interviewed the park directors.

# Analysis

- We imputed missing data and calculated descriptive statistics
- We estimated energy expended in the park by using METs
- We used the log transformation for the raw outcome to handle nonlinearity as well as stabilize error variances
- We adjusted for fixed time effect: season, weekend, and location in a residential vs. commercial area

# Modeling

- We ran two models to predict park use and energy expenditure in the park
  - Models examined role of “malleable” factors:
    - number of supervised/organized activities
    - the number of park target areas that were accessible,
    - the number of full and part-time staff, and the
    - number of activity facilities in the park (like basketball and tennis courts)

# Self report of park use and exercise

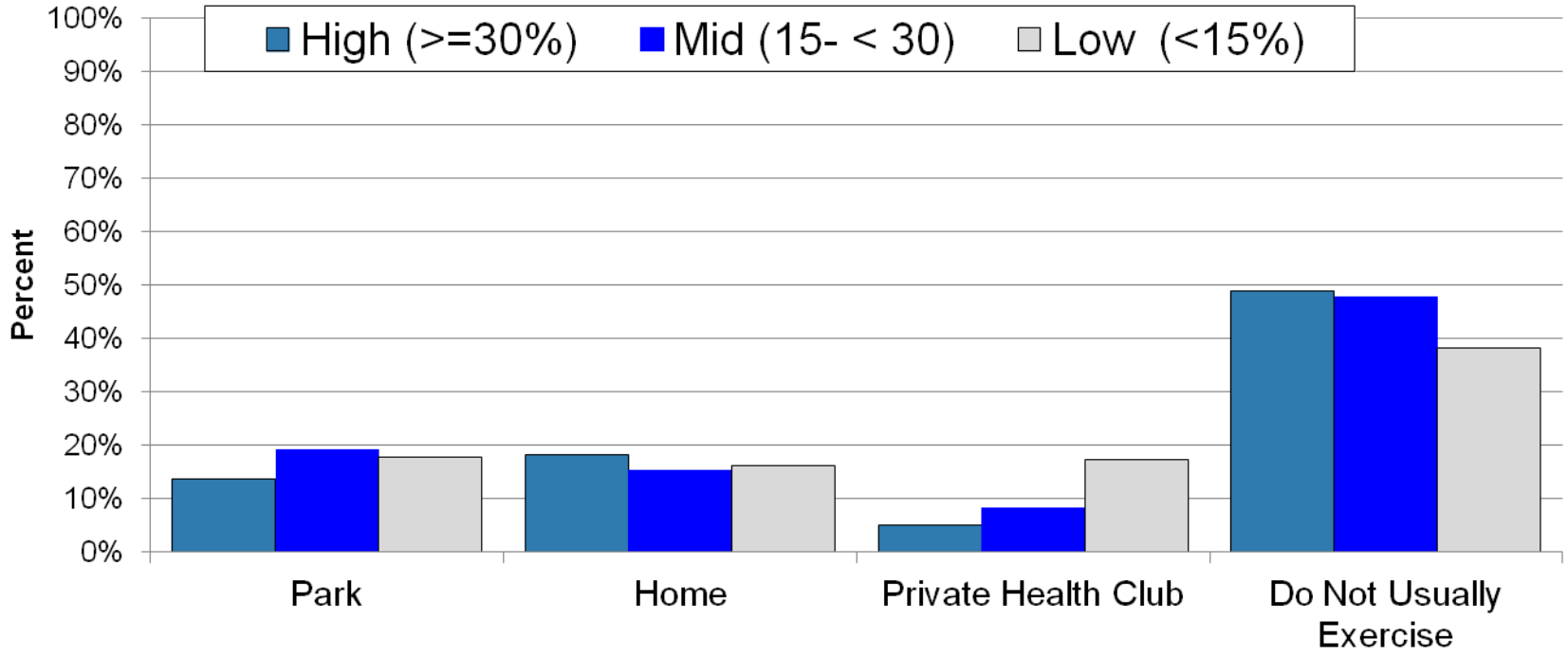
- We controlled for
  - gender
  - race
  - distance respondents lived from park
  - whether they know the park staff
  - self-rated health
  - daily hours spent watching electronic media
  - frequency of visiting other parks, and
  - whether they engaged in physical activity at work
- We analyzed 3,249 household and 3,654 park user samples separately

# *Park Characteristics by Neighborhood Poverty*

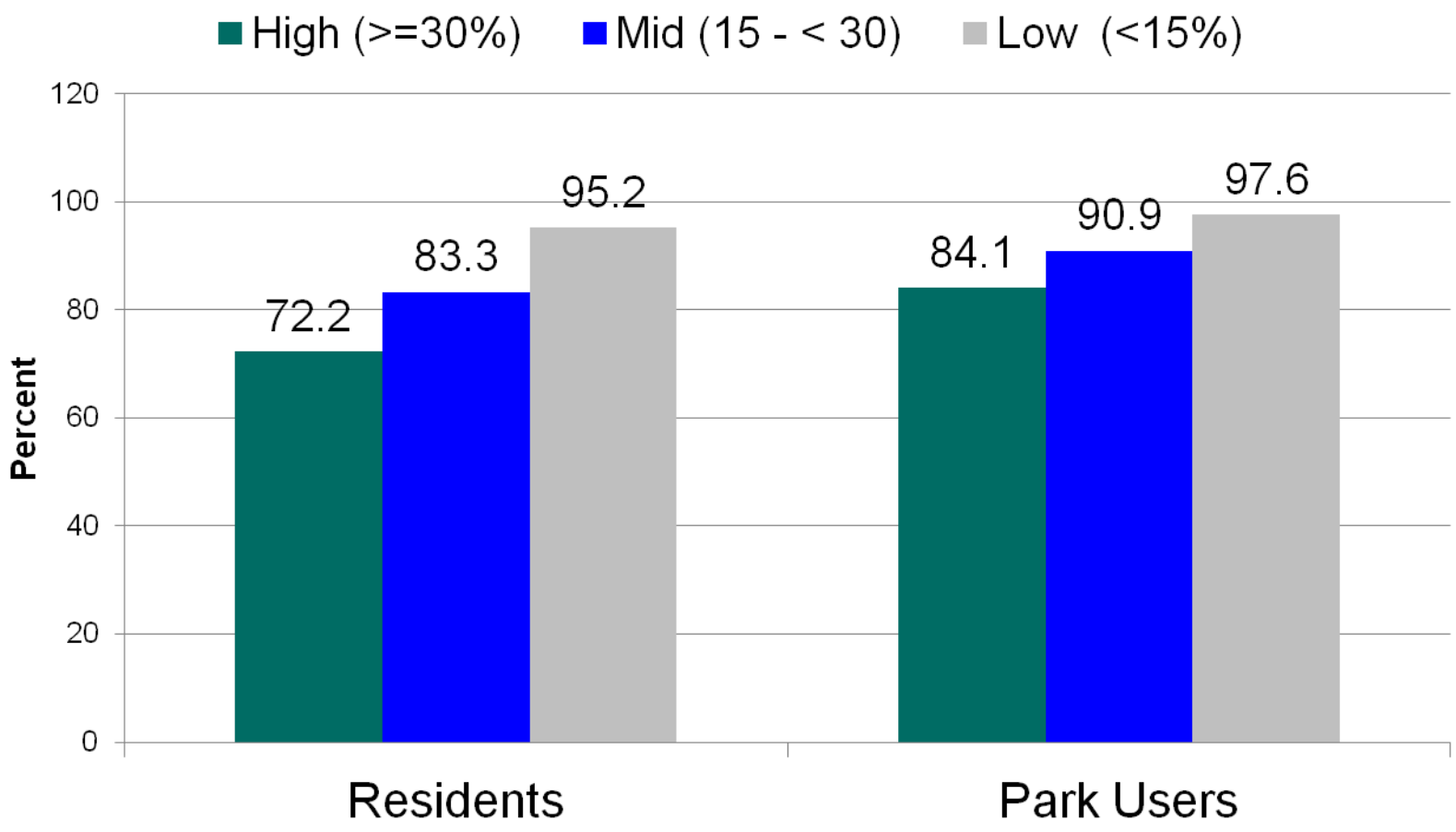
| | **High Poverty (19)** | **Medium Poverty (16)** | **Low Poverty (15)** |
|---|---|---|---|
| Average Acres | 9 | 13 | 19 |
| Population density | 58,334 | 35,369 | 19,286 |
| # Part-time staff | 10 | 13 | 18 |
| # Programs offered | 8 | 11 | 10 |
| Offer after-school program | 88% | 75% | 27% |
| Use email | 5% | 13% | 47% |
| # organized activities | 11 | 19 | 19 |
| Average # observed users/park | 1710 | 2382 | 2234 |

# *Where Residents Usually Exercise by Neighborhood Poverty Estimates*

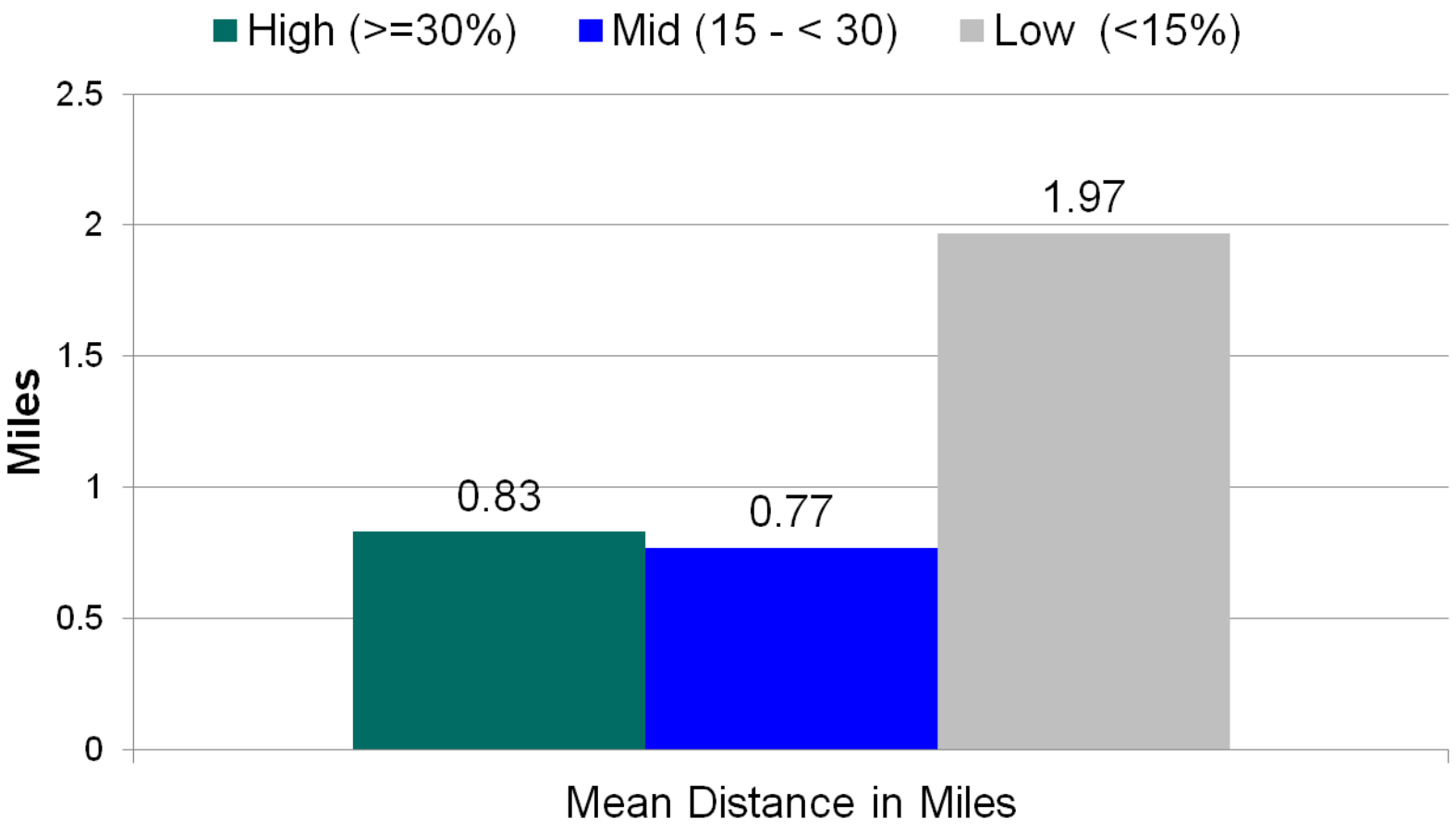
***(Residents living within 1 mile from Los Angeles Parks)***



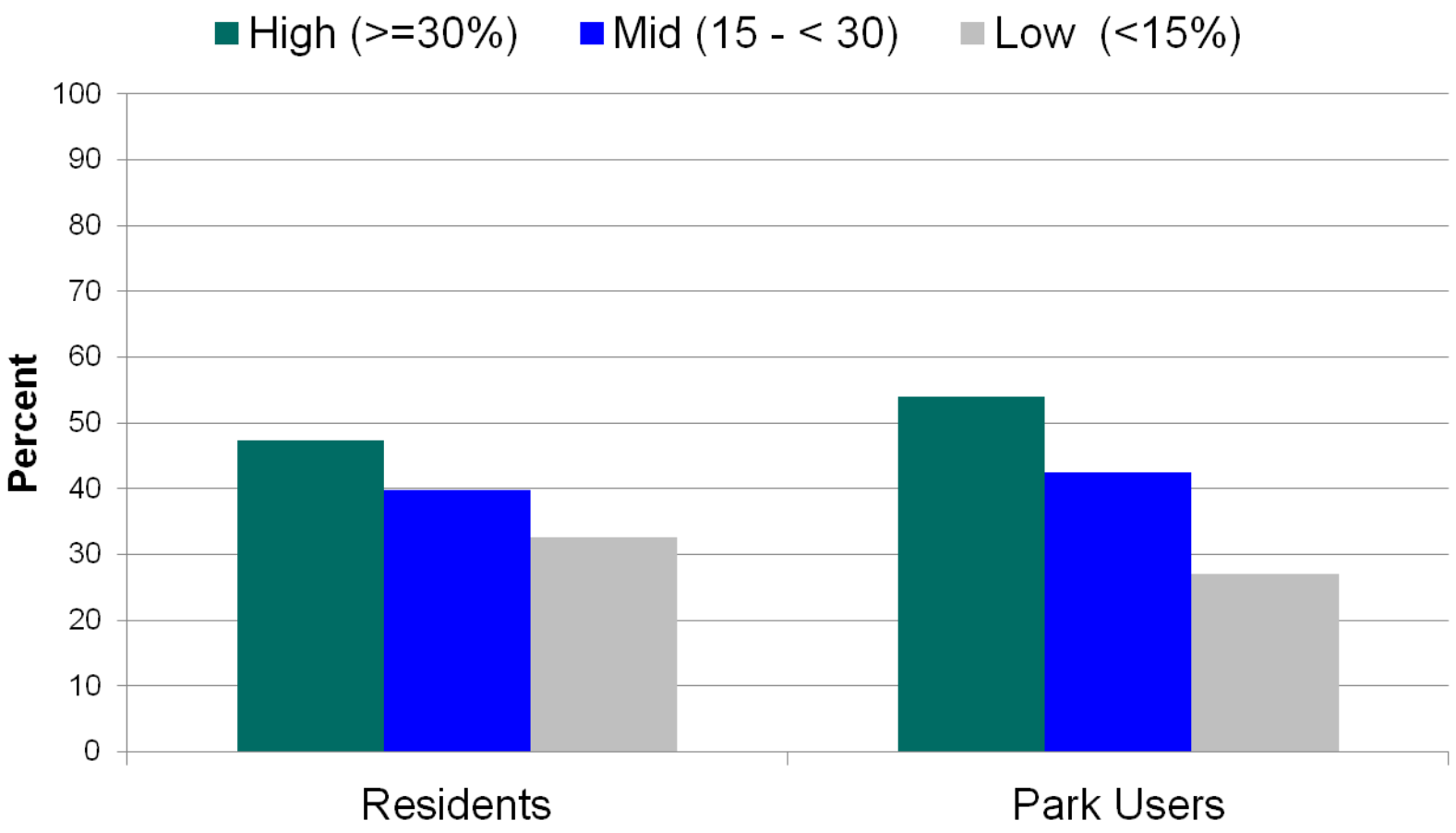
# *Perceive Park as Very Safe or Safe*



# Park User Distance from the Park

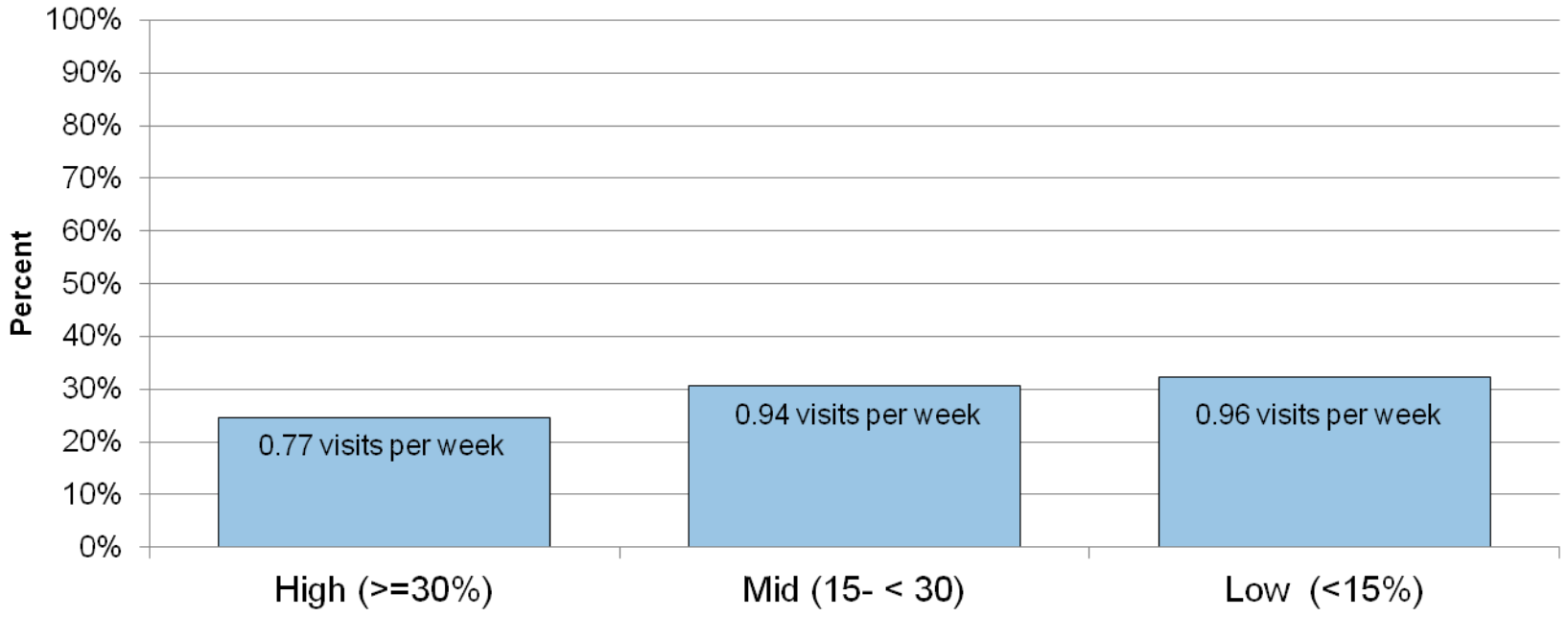


# Walk to the Park



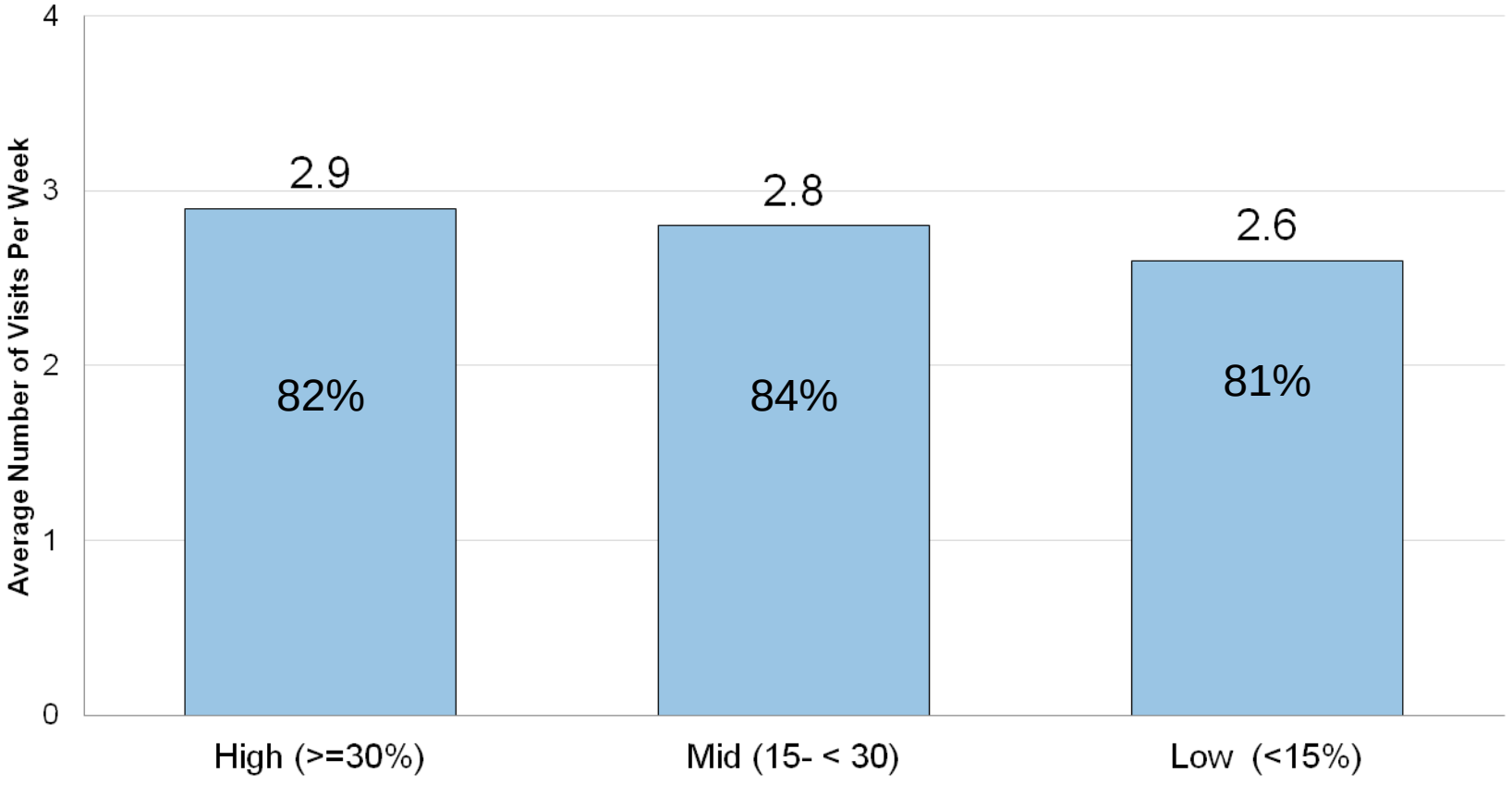
# Residents that Visit the Park at Least Once A Week

(CBPR Baseline 50)



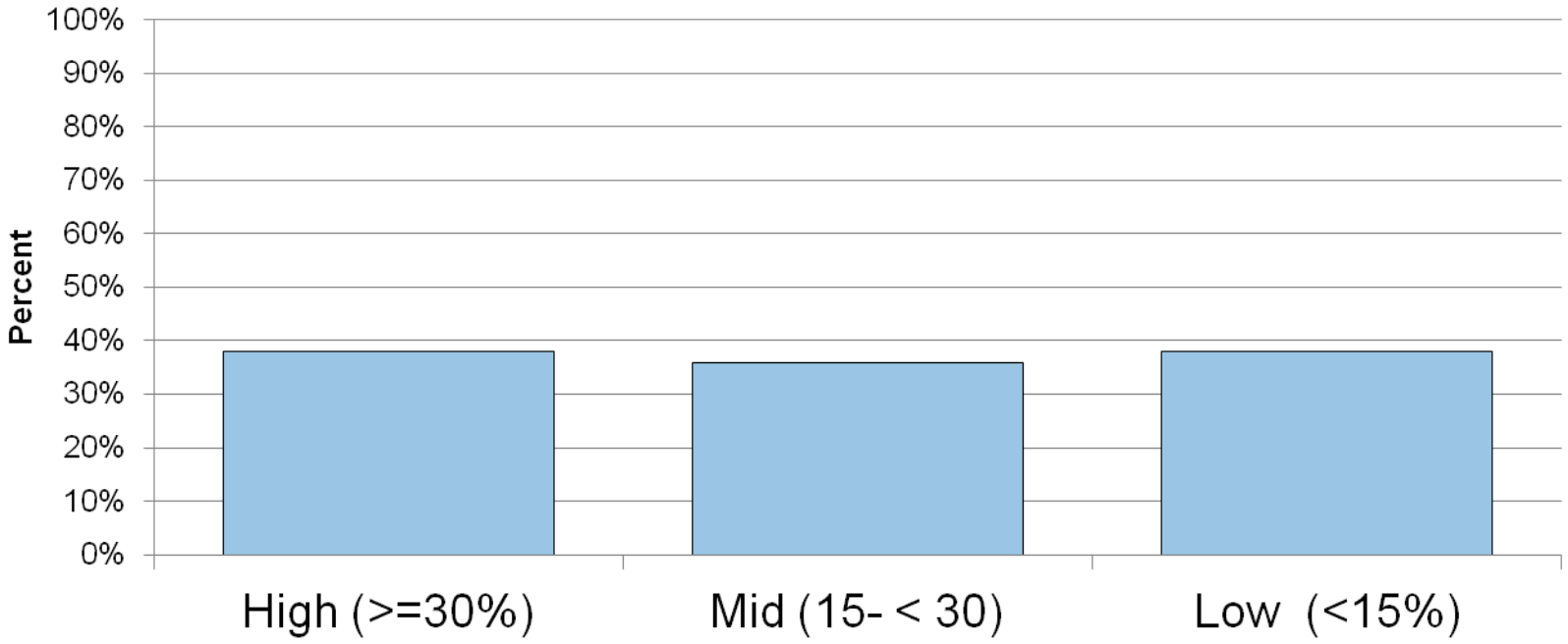
# *Park Users that Visit the Park at Least Once A Week*

***(CBPR Baseline 50)***

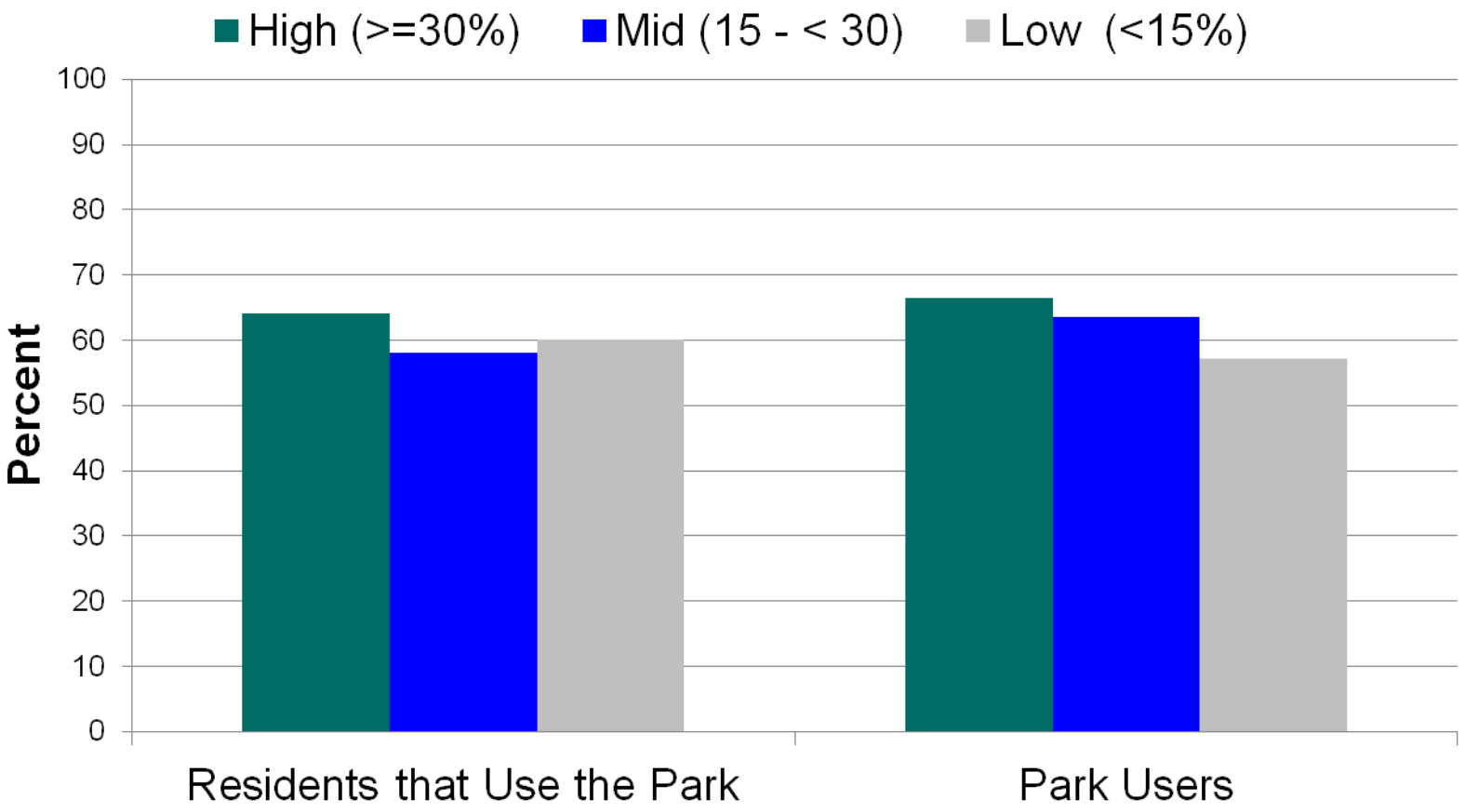


# Residents that Never Visit Any Neighborhood Parks

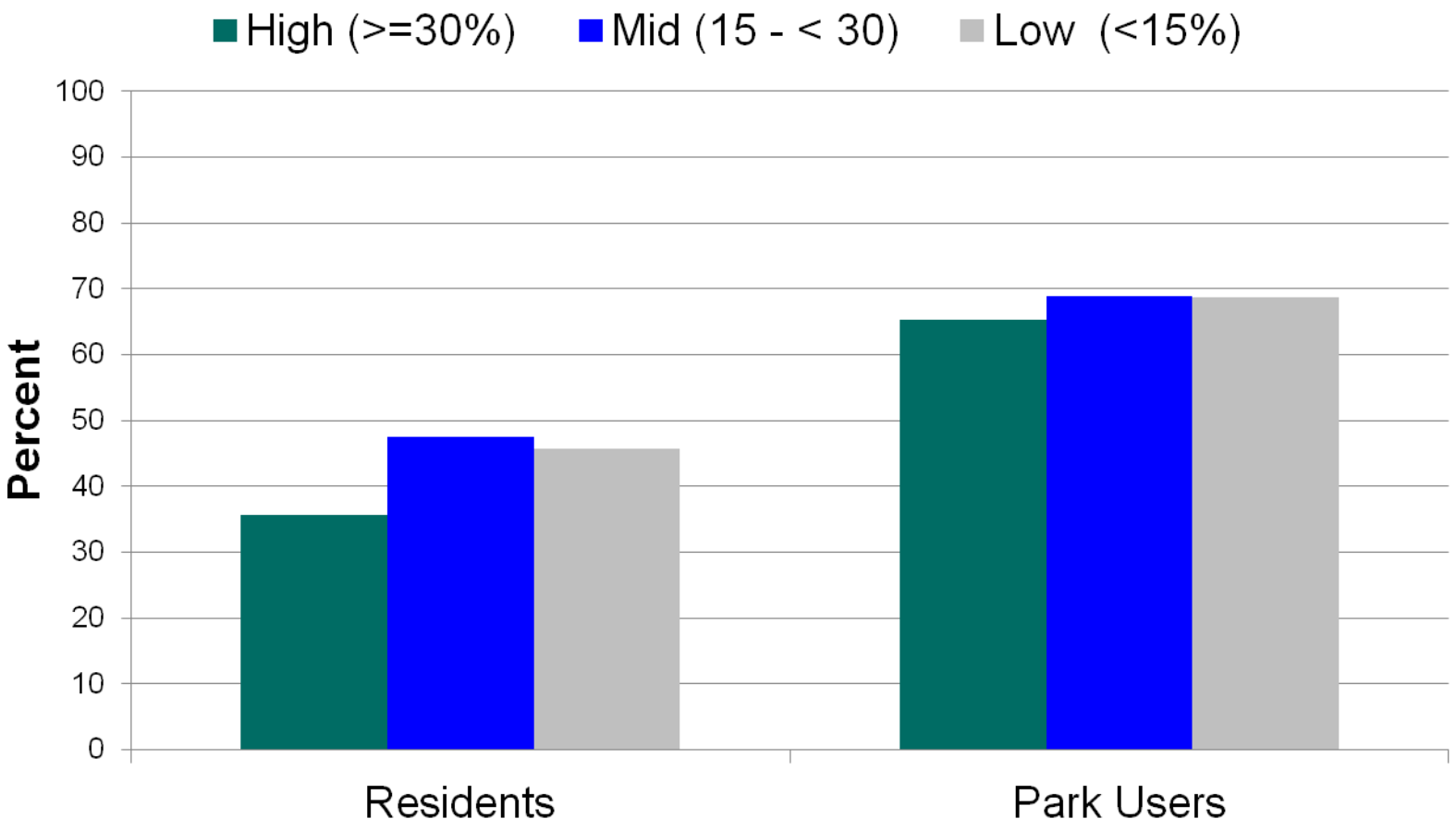
(CBPR Baseline 50)



# See People They Know at the Park



# Know the Park Staff



# *Top Activities Across Poverty Levels are Similar for Females, Differ Among Males (observed over 100,000 people)*

| Primary Activity by Gender | High Poverty N=32,490 | Medium Poverty N=38,112 | Low Poverty N=33,610 | P Value |
|---|---|---|---|---|
| **Types of Activities, Female** | | | | |
| **Sitting** | 36.8% | 35.9% | 33.7% | **<.0001** |
| **Playground activities** | 14.4% | 14.7% | 13.7% | **0.0477** |
| **Walking** | 10.1% | 8.3% | 10.2% | **<.0001** |
| **Standing** | 10.9% | 11.8% | 10.0% | **<.0001** |
| **Types of Activities, Male** | | | | |
| ***Sitting** | 28.0% | 20.5% | 19.0% | **<.0001** |
| **Basketball** | 11.0% | 13.2% | 13.1% | **<.0001** |
| ***Baseball/Softball** | 4.0% | 12.0% | 12.1% | **<.0001** |
| ***Soccer** | 14.9% | 7.4% | 9.3% | **<.0001** |
| **Standing** | 10.7% | 11.1% | 7.8% | **<.0001** |

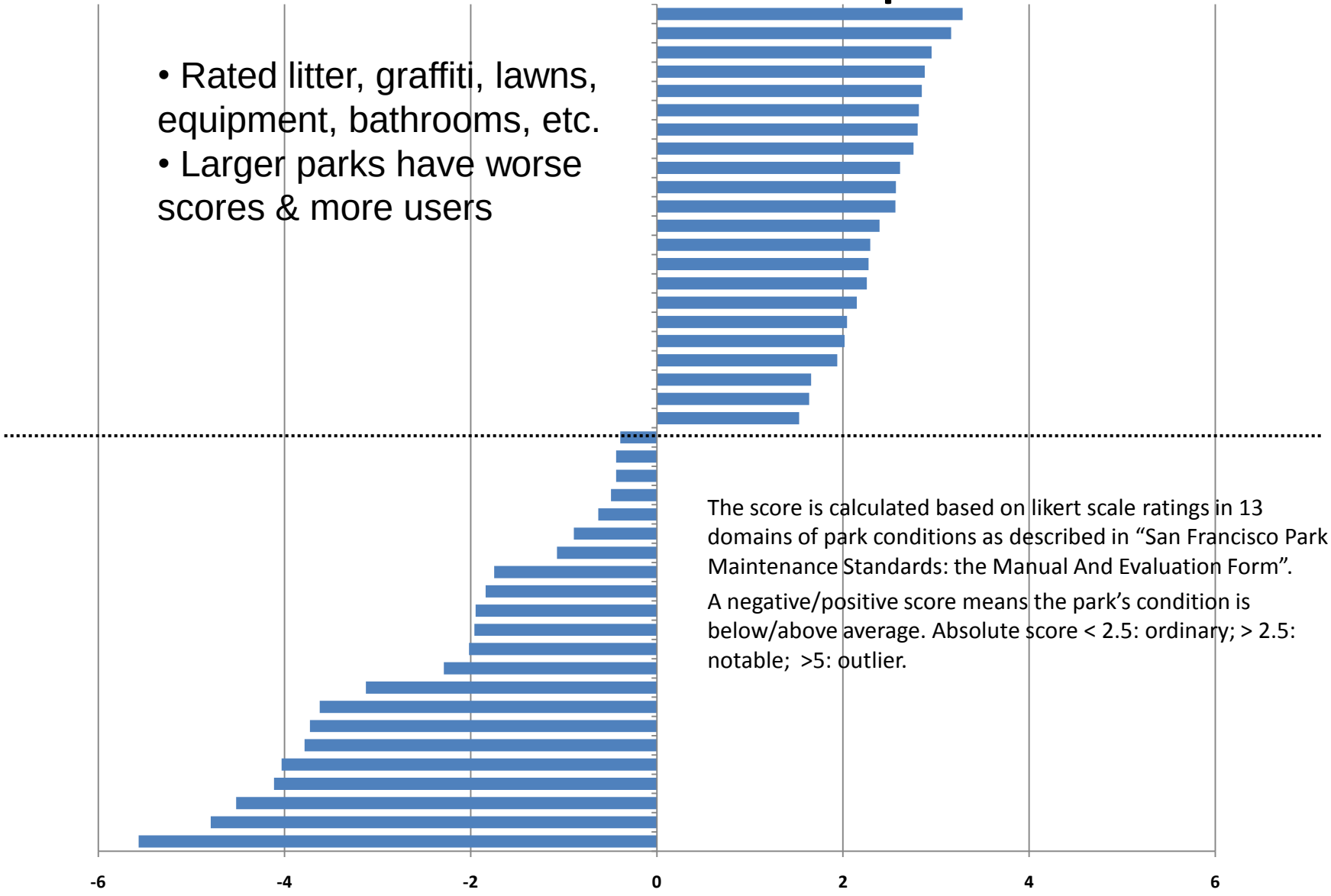
# Park Use is Lower in High Poverty Neighborhoods

- After accounting for park size and population density, high poverty area parks are used less than parks in wealthier neighborhoods
- For every 10% increase in households in poverty, there is a 34% decline in park use and 37% decline in energy expended
- If parks had the same staff, facilities, and activities, and accessible areas, then the decrease in park use and energy would only be about 21-22%

# Staffing and Programming Influences Park Use

- Each additional part-time staff increases park use by 1%
  - With 8 more part time staff/park, a high poverty area park would serve 124 more users during the 28 observation periods/week
  - Each organized activity increases park use by 4% and each supervised activity increases use by 7%
    - If high poverty parks had the same number of organized and supervised activities as low poverty parks, we would see 495 and 868 more users/week, respectively

# No Association Between Park Maintenance and Park Use in this Sample




The score is calculated based on likert scale ratings in 13 domains of park conditions as described in "San Francisco Park Maintenance Standards: the Manual And Evaluation Form".

A negative/positive score means the park's condition is below/above average. Absolute score < 2.5: ordinary; > 2.5: notable; >5: outlier.

# What Factors Influence Reports of Park Use?

- Knowing the park staff was the strongest correlate of use:  Knowing staff associated with higher probability of going to the park by over 4-fold (10% to 57%)
- Perception of safety played a relatively small role in report of park use – changing probability from 10% to 13%
- Watching electronic media associated with reduced use among park users

# Summary

- Neighborhood poverty level has a major association with park use in Southern California
- Park size and facilities are associated with park use and PA
- Several park-based factors are remediable, including staffing patterns and programming

# Limitations

- Limited generalizability
- Data are cross-sectional
- Experimental studies are needed to determine whether the changing the potentially remediable factors will increase physical activity in parks in high poverty neighborhoods

# Conclusion

- Reductions in disparities in park use between low- and high-poverty neighborhoods may require more programming and more staffing
- This may also contribute to improving perceptions of park safety.