HHS Public Access

Author manuscript

Womens Health Issues. Author manuscript; available in PMC 2019 January 01.

Published in final edited form as:

Womens Health Issues. 2018 ; 28(1): 6–13. doi:10.1016/j.whi.2017.11.003.

Gender Disparities in Park Use and Physical Activity among Residents of High-Poverty Neighborhoods in Los Angeles

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Abstract

Introduction—Physical inactivity is more prevalent among women than men and is related to poor health outcomes. Neighborhood parks constitute an important resource for physical activity (PA), however, previous studies of park users have found fewer women being physically active.

Methods—We conducted a hierarchical mixed-effect regression analysis of the independent associations between gender and park use and PA among a population-based sample in high-poverty neighborhoods in Los Angeles. Data sources included: 1) structured interviews with adults (≥ 18 years) in randomly selected households within 1 mile of study parks (n=2,973); 2) systematic observations of study parks (n=48); and 3) neighborhood characteristics from the 2010 U.S. Census.

Results—After controlling for race-ethnicity, education, body mass index ≥30, health status, proximity to park, having children under 18, perceived park safety, estimated screen time, and park- and neighborhood-level variables, statistically significant differences were found between women and men on all outcomes. Compared to men, women reported fewer park visits in the past week (−0.28 times/week, p<.001) and shorter durations of a typical park visit (−11.11 minutes/visit, p<.001). Women were also less likely than men to report levels of PA that meet national guidelines (≥150 min of MVPA per week) [risk difference (RD) = −0.06, p<.01] and to exercise in the park (RD = −0.13, p<.001) or elsewhere (RD = −0.13, p<.001).

Conclusions—Women living in high-poverty neighborhoods use parks less for PA than men. Improved park-level design, programming, and other policy interventions may be needed to mitigate disparities in park use and PA for all.

INTRODUCTION

Physical inactivity is an important public health challenge worldwide. When measured through accelerometers, a majority of the U.S. population – 58% of children, 92% of

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The authors declare no financial conflicts of interest.

adolescents, and 95% of adults – does not meet the current physical activity (PA) recommendations (Troiano et al., 2008). Further, across all age groups, females are less active than males and activity declines with age (Troiano et al., 2008). Finding ways to increase regular PA, in particular among girls and women, is imperative to addressing chronic diseases such as hypertension, diabetes, osteoporosis, particular forms of cancer, obesity and some psychological disorders (Van Tuyckom, Van de Velde, & Bracke, 2013).

In urban areas, parks constitute an important resource for community-based PA (Bedimo-Rung, Mowen, & Cohen, 2005; Han, Cohen, & McKenzie, 2013; Han et al., 2014), but there are disparities in access and use across geographic settings and populations. Approximately 70% of persons in the US live within walking distance to a park (Mowen, Graefe, Barrett & Godbey, 2016). Recent estimates among the 100 most populous cities show great variation in the percentage of their respective populations living within a 10-minute walk of a park, ranging from 26% to 99% (Harnik, McCabe, & Hiple, 2017). Further, studies using systematic observations of parks consistently find gender disparities in park use and park-based PA. A review of 24 observational studies in parks using the System for Observing Play and Recreation in Communities (SOPARC) found that across all age groups, on average, more males than females were observed in parks, and males were typically more physically active in parks than females (Evenson, Jones, Holliday, Cohen, & McKenzie, 2016). Another review including studies with a broader range of assessment methodologies reported equal numbers of men and women using parks, but did find that men engaged in more park-based moderate to vigorous PA (MVPA) than women (Joseph & Maddock, 2016). Qualitative research has suggested that women may be discouraged from using parks (McCormack, Rock, Toohey, & Hignell, 2010). For example, in one study African American women were afraid to use their neighborhood parks due to safety concerns (Wilbur, Chandler, Dancy, Choi, & Plonczynski, 2002), while in another, Latino women reported PA barriers such as insufficient lighting and fear of crime (Cronan, Shinew, Schneider, Stanis, & Chavez, 2008).

Neighborhood poverty level has a strong negative association with park use and park-based PA (Cohen et al., 2012). Parks in low-income areas may have fewer park resources and staffing, and/or residents in these areas may choose to use park-based resources less than those in more affluent areas. Parks in low-income communities can also be affected by crime, conflict, and discrimination, and sometimes have poorly maintained facilities (Stodolska, Shinew, Acevedo, & Izenstark, 2011) and are therefore often less attractive and appealing for PA (Kaczynski et al., 2014). Women often feel more physically vulnerable than men in such settings and have more concerns about personal safety, and thus crime-related safety may constrain their PA to a greater extent (Foster & Giles-Corti, 2008). For this reason, the physical environment's influences on meeting PA requirements are likely to be secondary to individual and social environmental determinants (Giles-Corti & Donovan, 2002). For example, individuals' use of screen time has been shown to affect physical activity, including park-based PA (Cohen et al., 2012; Derose, Han, Williamson, & Cohen, 2015). Prior research has also found that access to recreational facilities (parks, walking trails, etc.) and neighborhood characteristics (e.g., sidewalks, streetlights, etc.) were more highly correlated with PA among women than among men (Brownson, Baker, Housemann, Brennan, & Bacak, 2001).

In sum, previous literature has found that men tend to use parks more for PA than women, however much of the evidence for gender disparities in park-based PA comes from park-based observations (i.e., among those who use the park). Few population-based samples of urban residents (including those who use the park and who do not) have examined whether there is a gender difference in park use and park-based PA among those with approximately equal access to parks and after controlling for other factors.

This paper examines the independent associations between gender and various measures of park use and PA among a population-based sample of adults in high-poverty areas within walking distance (< 1 mile) to neighborhood parks in the City of Los Angeles. Our analytic approach is guided by the social ecological model, which conceptualizes multiple levels of influences on PA, including intrapersonal, interpersonal/cultural, organizational, physical environment, and policy (Sallis et al., 2006). Our primary research question is: Among a population-based sample in high-poverty neighborhoods with equal access to parks, are there gender differences in park use and PA after controlling for other factors (individual, park, neighborhood)?

METHODS

Study Sample

The primary data for these analyses come from a larger study of 48 parks in high-poverty neighborhoods in Los Angeles (where >19% of households were living below the poverty line) (Cohen et al., 2016). The parent study was a cluster randomized controlled trial with two waves of data collection whose purpose was to examine factors associated with park use and park-based PA and test whether park-based interventions could increase park use and PA. Specifically, it was a 4-arm study with 3 different interventions offered at the park being compared to a control condition: free adult exercise classes, a frequent user program, and free classes plus a frequent user program (parks were randomized to control/business as usual or one of the 3 interventions). Because we found no differences among study arms in park-level use and PA between the two waves in all primary outcomes (Cohen et al., 2017), we combined the overall study arms for the present study to increase power.

For this sub-study, three data sources are used from the parent study that represent three levels in our multi-level model: 1) **individual factors** were obtained through structured interviews with adults (≥ 18 years) in randomly selected households within 1 mile of the study parks (n=2,973); 2) **park-level factors** were obtained through systematic observations of study parks (n=48); and 3) **neighborhood factors** were obtained from the 2010 U.S. Census. For the interviews, we planned to survey 30 households in each park's neighborhood per wave (60 total). The 60 households were randomly selected within 1 mile of each park, stratified by distances of 0-¼ mile, ¼-½ mile, and ½-1 mile to interview 20 individuals in each stratum, where half of sampled individuals were measured in each wave. The average refusal rate across waves was 17%. Trained, bilingual community health promoters (*promotoras*) conducted structured interviews with one adult per household about their use of the subject park, frequency of exercise, socio-demographics, health-related factors, perceptions of park safety, and estimated screen time. These same *promotoras* conducted systematic observations in study parks using SOPARC, a validated method using

momentary time sampling to assess the characteristics of parks and their users, including their PA levels (McKenzie, Cohen, Sehgal, Williamson, & Golinelli, 2006). Observations were conducted in each park 3 times on one day per month over a 6-month period at baseline and follow-up (12 days total, 6 weekend days, and 6 weekdays, or 36 one-hour observation periods per park). Specific measures collected through the interviews and systematic observations or obtained from the 2010 U.S. Census are listed below.

The RAND Human Subjects Protection Committee approved the study and an oral consent procedure for the resident survey.

Measures

Dependent variables—Park use was defined as the number of times residents stated visiting their neighborhood park in the previous 7 days, which has been validated with global positioning system monitoring in a racially and ethnically diverse sample (Evenson, Wen, Golinelli, Rodríguez, & Cohen, 2013).

Typical duration of a park visit was determined by asking residents, “On a typical day when you go to the park, how long do you stay there?” with response options: 0-30 minutes, 31-60 minutes, >1 hour but <2 hours, 2-3 hours, or >3 hours. This measure has also been validated with global positioning system monitoring in a racially and ethnically diverse sample (Evenson et al., 2013). Estimates were derived by taking the mid-points of the ranges (and 3 hours for the last category).

Meets PA recommendations (based on national guidelines for adults [2009]) was defined as reporting 150+ minutes of PA per week and were computed for each resident based on their responses to questions on 1) how many times per week they usually exercise, and 2) how long on average each exercise sessions lasts. Together these two measures constitute an “exercise vital sign,” which has demonstrated face and discriminant validity among a racially and ethnically diverse sample of health plan members in Southern California (Coleman et al., 2012).

Use of parks for exercise was determined by classifying residents into one of the following 3 groups: 1) does not exercise; 2) exercises but not in a park; and 3) exercises in a park. These classifications were based on answers to a question: “Where do you usually exercise?” with response options of “I do not usually exercise, park, home, private health club, streets or sidewalks, or other.” For analysis, we conducted separate comparisons: a) those who exercise in a park vs. those who do not exercise; and b) those who exercise elsewhere (home, private health club, streets or sidewalks, or other) vs. those who do not exercise.

Independent Variables—Our primary independent variable of interest was *gender* (male, female) as self-reported by participants.

We included as co-variates other **individual characteristics** that have been associated with park use and PA in previous studies (Cohen et al., 2012; Derose et al., 2015; Paxton, Sharpe, Granner, & Hutto, 2005): *age*, *race-ethnicity* (African American, Asian/Pacific Islander, Latino, white, or other), *having a child*, *proximity to park* (within ¼ mile, ½ mile, and 1

mile), *health status* (fair/poor vs. good to excellent), *body mass index ≥30 (obese)* based on self-reported height and weight, *perceptions of park safety* (safe or very safe vs. not very safe or not at all safe), *time spent watching television, using computers, and other screen-time*, and *educational status* (<high school, high school graduate or GED, some college or college graduate).

We also included **park-level factors** that have been found to correlate with park use and PA (Cohen et al., 2012) (e.g., *park size* (acres); *number of observed organized activity sessions*). We included two park-level variables that we hypothesized might influence individual's park use, in particular women: *number of observed park users* and *% of park users that are male*.

Finally, we included **neighborhood-level factors** that have been found to correlate with park use and PA (Cohen et al., 2012) (*total population* and *% of households in poverty*, both within a 1-mile radius of park addresses).

Statistical analysis

We first calculated one-sample descriptive statistics of all park-level factors and a simple bivariate analysis of all variables by gender. Next, we fitted a set of hierarchical mixed-effect regression models to estimate relationships between gender and the park use and PA outcomes, controlling for other individual, park-level, and neighborhood-level factors. We also included park-level random effects to account for potential park-level clustering among survey respondents. We also included a fixed-effect for survey waves to account for secular trends during the study period (e.g., changes in city-level budget and management policies). All outcomes were modeled on their original scales without transformation for easy and meaningful interpretation of regression coefficients. The estimated gender effects were differences in means for continuous outcomes (number of days of park use, duration of park use), and differences in probabilities (i.e., risk differences) for a binary outcome (meets PA guideline, exercise in park vs. other location). Robust standard errors were applied to account for different distribution types in the outcomes. All models were fitted by PROC MIXED in SAS 9.4 (SAS Institute Inc., 2016). In discussing results, we use the term "association" when talking about the relationship between a specific variable (e.g., gender) and any of the outcomes. We use the term "differences" when translating what these "associations" mean in terms of the outcomes (means or probabilities) for the subgroup being compared (e.g., men vs. women).

RESULTS

Park Characteristics

Table 1 provides an overview of the park-level and neighborhood-level predictors for the 48 study parks. The populations within 1 mile of each park averaged 52,310 individuals and 27% of households in poverty. Parks averaged 8 acres in size and we observed an average of 20 organized activity sessions and 3,079 park users per park, of which 65% were male.

Bivariate Analyses

Table 2 shows the associations between gender and all study variables, including individual-level predictors (participant socio-demographics) and the park use and PA outcomes: frequency and duration of park use, level of PA, and exercising in park and other places. Statistically significant differences between men and women were found for the typical duration of a park visit (95 min for men vs. 84 min. for women, p<.0001), percent who meet PA recommendations (30.8% of men vs. 23.6% of women, p<.001), percent who usually exercise at a health club (9.4% of men vs. 5.5% of women, p<.0001), and percent who don't exercise (36.8% of men vs. 47.2% of women, p<.0001). On other outcomes (average number of park visits in past 7 days and the percent who usually exercise at park and at home), there were no statistically significant differences between men and women. Among co-variates, the only factors not associated with gender were obesity status and screen time (lack of differences between men and women on proximity to park was likely due to our sampling households equally across three strata).

Multivariate Analyses

Table 3 provides multivariate associations between gender and other covariates and outcomes. Controlling for race-ethnicity, education, BMI, health status, proximity to park, having children under 18, perceived park safety, estimated screen time, and park- and neighborhood-level independent variables, statistically significant differences were found between women and men on all outcomes.

Park Use—Compared to men, women reported fewer park visits in the past week (−0.28 times/week, p<.001) and shorter durations of a typical park visit (−11.11 minutes/visit, p<.001). (The fact that women did not have a statistically significant fewer number of visits in bivariate analysis [p=.0538] is likely due to the increased precision and power of the multivariate analyses). The number and duration of park visits were negatively associated with age years (−0.01 times/week, p<.01 and −0.52 minutes/visit, p<.001, respectively) and positively associated with a perception that the park is safe (0.31 times/week, p<.01 and 9.85 minutes/visit, p<.01, respectively). Several additional co-variates were associated with the number of visits, namely: Latino ethnicity (compared to whites and others, −0.32 times/week, p<.05); some college or college graduate (vs. < high school, 0.28 and 0.29 times/week, respectively p<.05); fair or poor health status (compared to excellent, very good, or good, 0.33 times/week, p<.01), proximity to park (0-¼ mile and ¼-½ mi vs. ½-1 mi, 0.79 times/week, p<.001 and 0.29 times/week, p<.01, respectively), and having a child under 18 years of age at home (0.19 times/week, p<.05). The number of observed park users was significantly associated with visit duration (0.28 minutes/visit, p<.01).

Meets PA Recommendations—Women were also less likely than men [RD=-.06 or 6 percentage points lower probability, p<.01] to report levels of PA that meet national guidelines (≥150 min of MVPA per week). Age was inversely associated with meeting PA guidelines (each addition year was associated with 0.4 percentage points lower probability, p<.001). Latinos and those with fair or poor health status had 10 and 9 percentage points lower probability, respectively (both p<.01), to meet PA guidelines than other groups.

College graduates had 17 percentage points higher probability to meet recommendations than those with less than high school education (p<.001).

Exercising in Park and Elsewhere—Women had 13 percentage points lower probability than men to exercise in the park and elsewhere (both p<.001). (The fact that women did not have lower probability of exercising in the park and elsewhere in bivariate analyses [p=.2025 and p=.3260, respectively] is due to how we defined these variables differently in Table 2 [for descriptive purposes] vs. Table 3 [for ease of interpretation]). Each additional year of age was associated with 0.5 percentage points lower probability of exercising in the park and 0.2 percentage points lower probability of exercising other places vs. no exercise (p<.001 and p<.05, respectively). African Americans had 23 percentage points lower probability of exercising in the park (p<.001) and 26 percentage points lower probability of exercising elsewhere than white/Asian/other (p<.001). Latinos had 21 and 22 percentage points lower probability of exercising in the park and elsewhere, respectively, than white/Asian/other (p<.001). Each additional hour of screen time had 2 and 3 percentage points lower probability of exercising in the park and elsewhere, respectively (p<.05 and p<.01). Additional co-variates associated only with exercising in the park were fair or poor health status (9 percentage points lower probability, p<.05), living 0-¼ mi from park compared to ½-1 mi (14 percentage points higher probability, p<.001), and perceiving the park to be safe or very safe (8 percentage points higher probability, p<.05). Finally, college graduates had a 13 percentage points higher probability of exercising outside the park compared to those with less than a high school education (p<.01).

DISCUSSION

In this population-based sample of households in high-poverty neighborhoods within 1 mile of a Los Angeles park, we found consistent gender disparities in terms of park use and PA. Specifically, women had fewer visits and shorter durations in visits to their neighborhood park than men, and women were less likely than men to report 150 minutes or more of PA per week and exercising in the park or elsewhere. Women are thus not getting the same levels of PA from parks in high-poverty Los Angeles neighborhoods as men are. This is concerning, particularly because research has found that physical inactivity contributes substantially to mortality in later life and is partially responsible for socioeconomic inequalities in the risk of disability onset, especially among women (Shaw, McGeever, Vasquez, Agahi, & Fors, 2014).

Given that nearly three-quarters of those surveyed were Latinos and the fact that Latinos comprise a near-majority in Los Angeles, it is also worth reflecting on the disparities among Latinos. Latinos' reduced utilization of the park and lower levels of physical activity suggests that Latinos are particularly disadvantaged when it comes to park use and PA. Interestingly, having one or more child at home was associated with more frequent park use – suggesting that parents have more of a reason to go to the park. Further, it should be noted the only outcome where Latinos were *not* significantly different from whites or others was in typical duration of park visit. Parks can be important venues for family gatherings and socialization among Latinos (Derose et al., 2015; Gobster & Delgado, 1993; Sasidharan, And, & Godbey, 2005).

Perceiving the park as safe was also consistently and positively associated with park use, meeting PA recommendations, and exercising in the park. Park safety is likely influenced by multiple factors, including the overall level of crime within the surrounding community. However, research among Latinos has found that perceived safety is more important than objective crime in predicting objectively measured PA (van Bakergem, Sommer, Heerman, Hipp, & Barkin, 2017). Research conducted across multiple U.S. cities among residents living near parks has found that perceived safety was the strongest predictor of park use and PA and completely mediates the effect of neighborhood physical incivilities (Lapham et al., 2016). Further, perceived safety has been found to mediate the relationship between all social environmental variables and leisure time PA and walking, especially among urban women (Timperio, Veitch, & Carver, 2015). Research on perceptions of safety regarding park settings has also found that environmental cues (e.g., low lighting, litter, blocked views) and social cues (e.g., presence of other people in the park) also play a role and interact significantly with gender (Jorgensen, Ellis, & Ruddell, 2013).

Fair or poor health status was positively associated with park use and exercising in park, though negatively with meeting PA recommendations. This finding contrasts somewhat with previous findings among a broader range of Los Angeles parks (not just high-poverty) – where good to excellent health was consistently and positively related to park use, PA, and exercising in the park and elsewhere (Derose et al., 2015). In high-poverty neighborhoods, parks appear to be an important source of PA for individuals reporting fair to poor health status. However, screen time was negatively associated with exercising in park and elsewhere, reflecting the stiff competition for residents' leisure time posed by increasing use of technology devices.

In terms of park and neighborhood characteristics, only one was significantly associated with a study outcome: average number of park users observed at baseline was associated with slightly longer visits on average reported by neighborhood residents. More people using the park could enhance residents' perceptions of park safety and encourage longer visits.

Limitations

Our data come from two cross-sectional surveys, and thus the directions of the relationships are unclear and causality cannot be inferred. In addition, most of our measures, at least the individual-level and outcome measures, are based on self-report and therefore subject to various kinds of bias including recall and social desirability. Finally, the surveys were conducted in one metropolitan area, which may limit generalizability.

Implications for Practice and Policy

Parks offer a sustainable way to promote physical activity among diverse populations, but for women to enjoy these benefits, attention may need to be paid to various types of programming and park design issues that can facilitate PA among women. For example, previous research has suggested that programs that provide child care may be necessary to facilitate Latino women engaging in park-based PA (Casper, Harrolle, & Kelley, 2013; Cronan et al., 2008). Also, park programming can be arranged so that women can drop off

kids at sports or other activities, and then attend adult fitness classes that start a few minutes after and end a few minutes before children's activities. Issues related to park-design could facilitate PA among women, such as creating walking paths or placing exercise equipment around playgrounds. Further, given the important role that parks have in providing play areas for children and venues for families and friends to socialize, having park staff available to facilitate group PA activities around the playground and at group events (e.g., sack races, dance, etc.) could reach large numbers of individuals already in the park, but engaging in mostly sedentary activities. Addressing environmental and social cues through park design and maintenance can address some of the safety issues of most concern to women. Further, since we also found that living closer to the park was associated with increased number of park visits and likelihood of exercising in the park, municipalities should consider ways to meet the standard being promoted by park advocates that all residents have a park within a ½ mile or 10-minute walk (Harnik & Martin).

Conclusion

Despite similar proximity to parks and controlling for a range of individual, park- and neighborhood-level factors, women in high-poverty neighborhoods experience consistent disparities in park use and PA as compared to men. Park-level design and programming and policy interventions to address these disparities are needed to fully realize parks' potential for promoting PA among *all* residents of high-poverty communities.

Acknowledgments

We thank collaborators at the Los Angeles Department of Recreation and Parks and in particular: Mark Mariscal, Sophia Pina-Cortez, and Kevin Regan. We also acknowledge the important role played by the *promotoras* (bilingual community health promoters) from AltaMed Health Services in helping to collect the data and Terry Marsh and Laura Raaen of RAND in managing fieldwork.

Funding statement. Research reported in this publication was supported by the National Heart, Lung, and Blood Institute of the National Institutes of Health (NIH) under Award Number R01HL114283 (ClinicalTrials.gov Identifier: NCT01925404). The content is solely the responsibility of the authors and does not necessarily represent the official views of the NIH.

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Table 1

Park and neighborhood-level characteristics of study parks across low-income neighborhoods in Los Angeles (N=48)

	Mean	Range
Park Neighborhood Characteristics[a]		
Percent of households in poverty	27%	14 – 41%
Population within 1 mile of park	52,310	25,530 – 133,123
Park Characteristics		
Size (in acres)	8	2 – 26
Park Observations (over 12 days, 3 observation periods per day)		
Average number of park users observed per park	3,079	368 – 7,566
Percent male park users	65%	57% – 76%
Number of observed organized activity sessions	20	4 – 65

[a]Derived from 2010 Census; based on a 1-mile radius from the park recreation center address.

Table 2

Bivariate associations between gender and study variables among neighborhood residents surveyed (n=2,973)

Characteristic	Total (n=2,973)	Women (n=1,763)	Men (n=1,210)	P value
Participant Socio-demographics				
Average age (years)	43.06	42.13	44.41	**<.0001**
Race-ethnicity				
% Latino	73.43	77.51	67.47	**<.0001**
% African American	9.78	7.78	12.70	**<.0001**
% White	10.32	9.03	12.20	**0.0053**
% Asian	1.99	1.99	1.99	0.9936
% Other race-ethnicity	0.10	0.11	0.08	0.7969
Education level				
% <High school	32.69	29.83	36.88	**<.0001**
% High school graduate	32.82	37.54	25.90	**<.0001**
% Some college	16.11	18.11	13.16	**0.0003**
% College graduate	18.38	14.51	24.06	**<.0001**
% with child under the age of 18	46.04	52.82	36.16	**<.0001**
Distance living from park[a]				
% that lives within ¼ mile of park	33.37	34.43	31.82	0.1379
% that lives within ¼-½ mile of park	33.74	33.24	34.46	0.4880
% that lives within ½-1 mile of park	32.90	32.33	33.72	0.4288
% Perceive park safe/very safe	75.10	73.56	77.42	**0.0367**
Poor or fair self-rated health	22.77	20.07	26.70	**<.0001**
% Obese (BMI≥30)	18.97	18.92	19.06	0.9258
Mean screen time (minutes per week)	162.25	164.48	158.95	0.0738
Park Use and Physical Activity				
Average # of visits in past 7 days	0.94	0.90	1.02	0.0538
Typical duration of park visit (minutes)	88	84	95	**<.0001**
% who meet PA recs (≥ 150 minutes per week)	26.54	23.57	30.83	**<.0001**
% who usually exercise at park	18.44	17.68	19.53	0.2025
% who usually exercise at home	18.03	17.46	18.87	0.3260
% who usually exercise at health club	7.10	5.53	9.39	**<.0001**
% who don't exercise	43.0	47.23	36.82	**<.0001**

[a]Due to our sampling approach, which selected random samples of households within each of these distance strata, these groups are expected to be distributed approximately equally.

Boldface indicates statistical significance (p<.05)

Table 3

Multivariate associations between gender and other co-variates and park use and PA among neighborhood residents (n=2,973)

Characteristic	# visits to parks in last 7 days	Typical duration of park visit (minutes)	Meets PA recs (≥150 min per week)	Exercises in parks (vs. no exercise)	Exercises in other places (vs. no exercise)
INDIVIDUAL	Mean (95% CI)	Mean (95% CI)	Probability (95% CI)	Probability (95% CI)	Probability (95% CI)
Female vs. male gender	**−0.28 (−0.43, −0.12)** ***	**−11.11 (−15.52, −6.69)** ***	**−0.06 (−0.10, −0.02)** **	**−0.13 (−0.19, −0.08)** ***	**−0.13 (−0.18, −0.08)** ***
Age (years)	**−0.01 (−0.02, −0.003)** **	**−0.519 (−0.71, −0.32)** ***	**−0.004 (−0.006, −0.002)** ***	**−0.005 (−0.007, −0.002)** ***	**−0.002 (−0.004, 0.000)** *
Black vs. whites/others	0.04 (−0.30, 0.38)	9.36 (−0.04, 18.77)	−0.08 (−0.17, 0.00)	**−0.23 (−0.35, −0.11)** ***	**−0.26 (−0.36, −0.16)** ***
Latino vs. whites/others	**−0.32 (−0.59, −0.05)** *	−4.09 (−11.32, 3.13)	**−0.10 (−0.16, −0.03)** **	**−0.21 (−0.31, −0.11)** ***	**−0.22 (−0.31, −0.14)** ***
HS graduate (vs. <HS)	0.01 (−0.19, 0.22)	2.05 (−3.70, 7.81)	0.01 (−0.04, 0.06)	0.03 (−0.04, 0.09)	−0.04 (−0.11, 0.03)
Some college (vs. <HS)	**0.28 (0.03, 0.54)** *	−1.96 (−8.84, 4.93)	−0.01 (−0.08, 0.06)	−0.01 (−0.10, 0.07)	0.00 (−0.08, 0.09)
College graduate (vs. <HS)	**0.29 (0.01, 0.57)** *	−7.07 (−14.61, 0.48)	**0.17 (0.10, 0.25)** ***	0.10 (0.00, 0.20)	**0.13 (0.04, 0.22)** **
Obese (BMI>30)	0.16 (−0.05, 0.36)	5.02 (−0.63, 10.67)	−0.02 (−0.08, 0.03)	0.02 (−0.05, 0.09)	−0.02 (−0.08, 0.05)
Fair or poor health status	**0.33 (0.11, 0.55)** *	−0.13 (−6.40, 6.14)	**−0.09 (−0.15, −0.03)** **	**0.09 (0.02, 0.16)** *	−0.04 (−0.11, 0.03)
Lives 0 – ¼ mile from park (vs. > ½ mile)	**0.79 (0.60, 0.98)** ***	−4.22 (−9.39, 0.94)	−0.02 (−0.06, 0.03)	**0.14 (0.07, 0.20)** ***	−0.04 (−0.10, 0.02)
Lives ¼ – ½ mile from park (vs. > ½ mile)	**0.29 (0.09, 0.48)** **	1.70 (−3.74, 7.14)	−0.02 (−0.07, 0.02)	0.04 (−0.02, 0.11)	−0.05 (−0.11, 0.01)
Has child <18 years old	**0.19 (0.03, 0.36)** *	−2.05 (−6.58, 2.48)	−0.03 (−0.07, 0.01)	0.04 (−0.01, 0.10)	−0.01 (−0.06, 0.04)
Perceives park as safe	**0.31 (0.12, 0.51)** **	**9.85 (3.77, 15.93)** **	**0.05 (0.00, 0.10)** *	**0.08 (0.01, 0.15)** *	−0.05 (−0.11, 0.00)
Screen time (hours)	0.04 (−0.02, 0.10)	1.55 (−0.08, 3.18)	0.00 (−0.02, 0.01)	**−0.02 (−0.04, 0.00)** *	**−0.03 (−0.05, −0.01)** **
PARK					
Acres	0.00 (−0.06, 0.05)	−0.03 (−1.93, 1.87)	0.00 (−0.01, 0.01)	0.00 (−0.02, 0.02)	0.01 (−0.01, 0.02)
Observed # park users	0.00 (0.00, 0.01)	**0.28 (0.10, 0.45)** **	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)	0.00 (0.00, 0.00)
% male park users	0.00 (−0.03, 0.02)	0.18 (−0.60, 0.96)	0.00 (−0.01, 0.00)	0.00 (−0.01, 0.01)	0.00 (0.00, 0.01)
# organized activity sessions	0.00 (−0.02, 0.01)	−0.22 (−0.63, 0.19)	0.00 (−0.01, 0.00)	0.00 (−0.01, 0.00)	0.00 (0.00, 0.00)
NEIGHBORHOOD					
% households in poverty within 1 mile	0.00 (−0.02, 0.02)	−0.14 (−0.68, 0.40)	0.00 (0.00, 0.00)	0.00 (0.00, 0.01)	0.00 (0.00, 0.00)
Pop. within 1 mile	0.02 (0.00, 0.05)	0.00 (−0.82, 0.81)	0.00 (−0.01, 0.00)	0.00 (0.00, 0.01)	0.00 (−0.01, 0.00)

Boldface indicates statistical significance

*
p<.05

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p<.01

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p<.001