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Title:

Reclaiming Public Parks and Public Health: Community-led Safe Passages and Physical Activity in South Los Angeles, California

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Abstract

Background: Safe Passage interventions aim to enhance public safety and improve access to community resources, including public parks, in underserved communities. However, no studies have directly compared community-led and police-led safety interventions with respect to park-based moderate-to-vigorous physical activity (MVPA). To address this gap, we compared associations between Community-led Safe Passage Services (SPS) and the Los Angeles Police Department Community Safety Partnership (CSP) program with MVPA in South Los Angeles (South LA) public parks.

Methods: We conducted structured observations of 3,997 park users across 8 SPS and 9 CSP parks in South LA using the System for Observing Play and Recreation in Communities and the Physical Activity Resource Assessment. We applied t-tests, ANOVA, and hierarchical linear models to examine MVPA across park intervention types.

Results: Overall, MVPA was higher in SPS parks ($p < 0.001$). Black, male, teen, and adult park users exhibited significantly higher MVPA in SPS parks ($p < 0.001$). A hierarchical linear model controlling for sex, age, race, and park conditions indicated that Black park users were significantly less physically active in CSP parks ($p = 0.05$). Conversely, Black park users had significantly higher MVPA in SPS parks ($p = 0.034$). Intervention type was a stronger predictor of MVPA than park features and amenities, whereas incivilities were negatively associated with MVPA ($p < 0.001$).

Conclusions: Community-led safety interventions may promote physical activity among Black park users. These findings suggest that community-led public park safety models are a promising approach for advancing health equity.

Introduction

Public parks are critical neighborhood resources for promoting physical activity and preventing chronic disease.[1–3] In urban communities, public parks are the ideal spaces for moderate-to-vigorous physical activity, which is associated with well-established reductions in cardiovascular disease, type 2 diabetes, obesity, and premature mortality.[1,4–11] However, in low-income communities of color, structural racism—a system of policies and practices that unequally distribute resources and power—limits public park access, design, and control, creating racialized spaces shaped by historical disinvestment.[1,3,12–14] Compared with parks in predominantly white, affluent communities, parks in communities of color are often fewer, smaller, and of lower quality.[1,14–16] Structural inequities, such as inadequate park features (e.g., basketball courts and soccer fields), limited amenities (e.g., restrooms and water fountains), and visible signs of disorder (e.g., public alcohol and drug use), reduce park use and physical activity.[1,2,15,17] Broader neighborhood-level factors, including crime, violence, and aggressive policing, further constrain equitable access to public parks.[1,15,18–21]

Despite efforts to improve park safety in underserved communities, there is limited knowledge concerning the extent to which safety-focused interventions expand equitable access to parks and physical activity. One study found that the Los Angeles, California-based Parks After Dark program, which combined evening recreational programming with Sheriff's deputy patrols and community engagement, improved perceptions of safety and increased park-based physical activity.[22] Similarly, the Los Angeles Police Department's Community Safety Partnership (CSP) deploys officers in neighborhoods and local parks to build trust and deter violence.[23] However, the extent to which law enforcement-based strategies improve access to public parks and physical

activity opportunities remains unclear, particularly in communities with deep histories of over-policing and racialized surveillance.[19,20,24,25] In South Los Angeles (South LA)—a large, low-income community of color burdened by significant health disparities and limited access to public parks—persistent distrust in law enforcement raises concerns that strategies involving law enforcement may reinforce unequal access to public spaces, particularly those intended to support youth development, recreation, and health.[19,20,26–28]

Community-led safety interventions such as Safe Passage Services (SPS) have emerged as promising public safety initiatives for improving access to neighborhood resources, such as public parks, in communities with high rates of crime, violence, and disorder.[29–31] In Los Angeles, California, Safe Passage programs are city-funded violence-prevention initiatives administered through the Mayor's Office Gang Reduction and Youth Development program, in which community members, working as Community Intervention Workers (CIWs), conduct patrols in neighborhood spaces, including public parks, to provide a sense of safety and security.[32,33] SPS aligns with principles of empowerment theory by centering community agency, trust, and collective efficacy, engaging residents to lead the establishment of safe, welcoming spaces through relationship-building and collective care.[29,30,34–36] Rather than relying on law enforcement, SPS fosters residents' capacity to actively shape their neighborhood environments and social conditions, creating safer, more inclusive spaces that promote health and wellbeing.[29,37] Emerging evidence suggests that SPS and similar models not only reduce crime and violence but also promote equitable access to shared public spaces, such as parks.[29–31,38]

While existing research demonstrates that crime, violence, and disorder influence park utilization,[1,18,21,26] less is known about how different public safety strategies—particularly police-

based versus community-led models—shape access to parks and physical activity.[22,24] Given that safety interventions are often implemented without attention to their equity implications, a critical examination of community-led safety programs, such as SPS, in relation to police-based models is both timely and urgent.[24,29,38] To address this gap, we compare moderate-to-vigorous physical activity among park users in South LA parks exposed to SPS or CSP programming, with particular attention to racial differences in physical activity across intervention types. By applying a health equity lens, our study may provide important implications for community health, well-being, and access to public parks.

Methods

Our community-based participatory research (CBPR) project partnered Advocates 4 Peace & Urban Unity (APUU), a community-based organization focused on gang reduction and youth development (GRYD), in a community-academic research partnership with researchers from the University of California, Irvine, providing a grounded approach for identifying community interests and addressing the root causes of health disparities in underserved communities.[39,40] This CBPR approach laid the foundation for our study examining how community- and police-led safety interventions influence park use and physical activity in South LA.

Building on our team's prior CBPR investigating community-level crime and violence,[41] this study emerged from APUU's ongoing efforts to improve public safety, health, and well-being through their public park safety interventions in South LA, CA. South LA is a large, majority Black and Latiné (a term used to emphasize gender inclusivity[42]) community that bears an uneven burden of crime, violence, and health disparities. For example, homicide is the leading cause of premature

death for Black youth in Los Angeles.[43] From 2016-2020, the firearm-related homicide rate per 100,000 persons of the population among Black residents of Los Angeles was 17.2, nearly four times the County-wide rate of 4.3. Service Planning Area 6 (SPA 6), the Los Angeles County Department of Public Health planning region that includes South LA, has the highest number of firearm deaths in the County.[28] Residents have reported that public parks in South LA are unsafe due to visible drug and alcohol use and gang activity. At a community meeting, residents noted several incivilities, which are known to be associated with decreased physical activity,[1] deterring their use of local parks. For example, residents stated Jesse Owens Park, a site included in this study, "is such a hot spot for drugs and smoking." Another explained, "gangs drive drug activities in our parks." These conditions underscore the urgent need for safety strategies that center community knowledge and promote equitable access to recreational space.

Advocates 4 Peace & Urban Unity implemented SPS—an evidence-informed, community-led safety model associated with reductions in local crime[29–31]—as the ideal strategy for enhancing safety and encouraging physical activity in public parks. In APUU's implementation of SPS, trained Community Intervention Workers (CIWs), wearing APUU t-shirts, walked each park involved in the current study during peak park use—3:00 PM to 10:30 PM during weekdays and 10:00 AM to 10:30 PM during weekends. Two CIWs were assigned to each park and engaged visitors to explain the purpose of SPS and offer their assistance if attendees ever felt unsafe. CIWs also engaged children and youth in discussions about park safety and broader community wellbeing, emphasizing the role of public parks as communal spaces that promote health and wellness. This approach emphasized visibility, trust-building, and shared responsibility, aligning with broader goals of increasing equitable access to health-promoting environments.

Parks receiving SPS were compared to parks in neighborhoods participating in the Los Angeles Police Department's CSP program. CSP is a police-led initiative in which officers are embedded in neighborhood spaces, such as public schools and parks, to promote community relationships, engage youth, and deter crime. At our study sites, officers patrolled public parks, frequently engaging youth and broader community residents with stated goals of fostering trust and safety.[24] While CSP has been associated with reductions in crime,[23] questions remain about its effectiveness and acceptance in historically over-policed neighborhoods.[19] No parks in this study received both SPS and CSP services. All parks included in this study are located in South LA, serving predominantly Black and Latiné communities experiencing similar socioeconomic conditions and public safety challenges.[28] This study was approved by the University of California, Irvine, Institutional Review Board.

Structured Observation

Using the System for Observing Play and Recreation in Communities (SOPARC), a reliable tool ($r > 0.86$) for observing physical activity intensity in a range of settings,[44] all 17 South LA parks with either intervention—eight with SPS and nine with CSP interventions—were observed. The data collected consisted of the apparent age (child, teen, adult, senior), sex (male or female), race and ethnicity (Black, Latiné, White, Asian), and moderate-to-vigorous physical activity (MVPA) recorded on a 3-point scale (sedentary = 0 [e.g., sitting, lying down], moderate = 1 [e.g., walking, light calisthenics], vigorous = 2 [e.g., running, basketball]) of 3,997 individual park users. Each park was divided into activity zones according to the locations of park amenities and facilities (e.g., basketball courts and playgrounds).[1,45] For example, soccer fields and basketball courts were

treated as separate zones. Each park was observed for a total of 6 hours: two randomly selected, non-holiday weekdays and one weekend day, with each session lasting two hours. Observers systematically began observations in the first activity zone encountered at the main entrance of each park, with 20-minute scans conducted in each zone, consistent with the SOPARC protocol.[1,44] Observations took place between the hours of 9:00 AM - 7:00 PM to ensure observer safety, from June to August 2023. The park observation times and dates were randomly assigned to reduce the likelihood of bias and confounding variables.

The Physical Activity Resource Assessment (PARA), a reliable tool ($r > 0.77$) for observing public park features (e.g., basketball courts and soccer fields), amenities (e.g., water fountains and picnic tables), and incivilities (e.g., dog refuse and evidence of alcohol use) was used to document park quality.[46,47] Amenities and features were numerically rated on a 4-point scale - 0 = not present; 1 = poor; 2 = mediocre; 3 = good. Incivilities were reverse-scored before analysis.

Four team members collected data, with two raters assigned to each park. Data collectors were accompanied by Community Intervention Workers (CIWs)—APUU employees with long-standing relationships in the community—to ensure safety during data collection hours. Observers reviewed SOPARC and PARA operational definitions, protocols, and data coding forms prior to fieldwork. Following,observers practiced coding park photographs and received feedback to correct for discrepancies. Observers completed field training in two local parks, with a minimum of 50 people observed per park, prior to formal data collection. Fleiss' kappa was calculated to assess observer agreement, resulting in scores of 0.87 and 0.91 for SOPARC and PARA, respectively.

Statistical Analyses

Statistical analyses were conducted in R version 4.5.0 (R Core Team, 2025), using relevant packages including lme4 for hierarchical linear modeling, emmeans for post hoc contrasts, and performance for model diagnostics. Moderate-to-vigorous physical activity (MVPA) was treated as a quasi-continuous variable across all analyses, consistent with prior research using SOPARC and broader methodological research demonstrating minimal bias when ordinal variables have three or more levels and large samples represent underlying continuous constructs,[48–50] as in the current study. Independent-samples Welch t-tests were used to examine differences in park quality (i.e., features, amenities, and incivilities), overall MVPA, and MVPA by race/ethnicity, sex, and age between SPS and CSP parks. Separate t-tests were also conducted within each park type to assess differences by sex and race.

To examine differences in MVPA across age groups, one-way Analysis of Variance (ANOVA) was conducted using age group indicators (Child, Teen, Adult, Senior), with Bonferroni-adjusted post hoc tests to identify between-group differences. Additional ANOVAs were run to assess interactions between age and park type (SPS vs. CSP). Estimated marginal means were used to compare MVPA between age groups within each park type.

To evaluate the combined influence of individual characteristics, park conditions, and intervention type, we developed a hierarchical linear model (HLM) to account for the nested structure of the data, with individuals clustered within parks. To account for the racial disparities in policing and park access,[1,14,15,19,20,24,27] we included an interaction term between park intervention type (SPS Park) and race (Black) to examine whether SPS associations with MVPA differed by race. The

model included fixed effects for sex (Female), race (Black), age (Child, Teen, Senior), park intervention type (SPS Park), our SPS Park by Race interaction, and park condition scores—features (e.g., basketball courts, soccer fields), amenities (e.g., restrooms, water fountains), and incivilities (e.g., trash, signs of alcohol use). These variables were included to adjust for potential confounding in the relationship between safety intervention type and park user MVPA. A random intercept for each park was included to account for between-park variability and to adjust for non-independence of observations within parks.

Male, adult, non-Black park users, and CSP parks served as the reference groups for their respective categorical predictors. In the SPS-by-Race interaction, the effect represents the Black-non-Black difference in CSP parks, whereas SPS effects were estimated separately by race. Due to small sample sizes, White (n = 61) and Asian (n = 15) park users were grouped with Latiné (n = 2,273) park users in the non-Black category to enable comparisons with Black park users (n = 1,648), who face distinct health and safety conditions in South LA (Table 1).[28,43] The non-Black group served as the reference category in all models.

Multicollinearity was assessed using Variance Inflation Factors (VIFs) from the performance package. All VIFs were below 3, and tolerance values exceeded 0.3, indicating no concerns with multicollinearity.

Results

As indicated in Table 1, we observed a total of 3,997 park users, with 1,742 users in SPS parks (n = 8) and 2,255 users in CSP parks (n = 9). On average, 218 people were observed in SPS parks and 251 in CSP parks, though variability across individual parks was notable. Of the park users, 41.2% were Black and 35.4% were female. Adults comprised the largest age group of park users

(49%). Significantly higher MVPA was observed in parks with community-led SPS compared to parks with police-led CSP interventions, with a mean difference of 0.098 (t = 3.57, p < 0.001) (Table 2). Park size (MD = 0.47, p = 0.85), features (MD = -1.82, p = 0.44), amenities (MD = -0.96, p = 0.66), and incivilities (MD = 1.88, p = 0.58) did not significantly differ between SPS and CSP parks (Table 2).

Disaggregating by race/ethnicity (Table 3) revealed that Black park users had higher MVPA in SPS parks compared to CSP parks (t = 4.37, p < .001) (Figure 1). In contrast, non-Black users' MVPA did not differ significantly across park types (MD = 0.039, p = 0.274). Male (t = 3.59, p < 0.001), teen (t = 6.56, p < 0.001), and adult (t = 3.55, p < 0.001) park users had significantly higher MVPA in SPS parks. Children had higher MVPA in CSP parks (t = -2.43, p = 0.015).

One-way ANOVA indicated that children and teens were significantly more active than all other age groups (F(3, 3993) = 552.3, p < 0.001) (Table 1). Post hoc tests showed that children and teens were significantly more active than adults and seniors (p < 0.001). These trends persisted across park types (Table 3). For example, the child-senior MVPA gap was slightly larger in CSP parks (MD = 1.30, p < 0.001) than in SPS parks (MD = 1.07, p < 0.001). The teen-adult gap was wider in SPS parks (MD = 0.81, p < 0.001) than in CSP parks (MD = 0.46, p < 0.001), suggesting different patterns of age-stratified MVPA across park types.

Our HLM model explained 33.2% of the variance in MVPA through fixed effects alone and 36.8% when accounting for park-level clustering (Table 3). However, our examination of race-specific effects revealed that Black park users' MVPA was significantly higher in SPS than in CSP parks (β = 0.19, 95% CI [0.01, 0.37], p = .034). While the association between non-Black park users and MVPA was positive in SPS parks, it did not reach significance in our model. Importantly, the SPS-

by-Race interaction term was not significant (p = .48). In CSP parks, Black park users' MVPA was significantly lower than that of non-Black users (β = -0.067, 95% CI [-0.13, -0.00], p = .050). This racial disparity was attenuated in SPS parks, where MVPA intensity was similar among Black and non-Black park users.

Our examination of individual covariates revealed that male park users were significantly more active than female users ($p < 0.001$). Compared to adults, children and teens were significantly more active ($p < 0.001$), whereas seniors showed significantly lower MVPA ($p < 0.01$). Among park-level covariates, incivilities were negatively associated with MVPA ($p < 0.001$), while features and amenities were not significant predictors.

Discussion

This study advances the understanding of public park safety interventions and physical activity. Our findings indicate that there were significantly higher levels of MVPA in parks staffed by community-led SPS workers compared to parks overseen by the LAPD's CSP, while there was no difference in park size or the quality of features (e.g., soccer fields, basketball courts), amenities (e.g., water fountains, bathrooms), and incivilities (e.g., evidence of alcohol use, dog refuse). These findings suggest that community-led public safety interventions grounded in community knowledge, visibility, and relationship-building may effectively support health-promoting behaviors in low-income communities of color.[29–31,36]

The benefits of SPS were most pronounced among Black, male, teenage, and adult park users, who, in the South LA context, are burdened by inequitable access to safe community spaces, such as public parks, and associated health disparities, such as obesity and diabetes.[1,18,26,41] This finding highlights the importance of developing culturally-responsive, in-park public safety interventions

and environmental controls that prioritize the needs of youth and broader residents of color who use them. Interestingly, children were more active in CSP parks, possibly reflecting the park design, programming, or safety features that interest parents of younger park users, such as playgrounds or police presence.[22,23,51–53] Nonetheless, while an extensive body of literature links park conditions to MVPA outcomes,[1,2,18,44,46] our research indicates that the types of public safety interventions within public parks and who implements them may be equally or more important in fostering active use, particularly in overpoliced communities.[13,25,54]

Our race-specific examination revealed important health equity implications. First, consistent with prior research documenting how police presence and surveillance often deter equitable access to public parks in underserved communities, our study found that Black park users were underrepresented in CSP parks compared to SPS parks (31.9% vs. 53.3%, respectively), suggesting unequal use of, access to, and comfort in these spaces.[20,25,55–59] Next, building on this body of evidence, our research also revealed that Black park users had significantly higher MVPA in SPS parks than in CSP parks, independent of park quality and conditions, revealing a concerning racial disparity in these spaces.[20,25,55–57] Indeed, the SPS-by-race interaction term was not significant. However, the consistent direction and magnitude of estimates across bivariate and multilevel analyses, revealing that Black park users were significantly more active in SPS parks, provides converging evidence warranting further investigation.[34,36,60–62]

Importantly, our findings build on prior research documenting how SPS can increase engagement in public space[22,29–31,38] by contributing new evidence to two relatively understudied areas. These include (1) the sparse body of literature concerning in-park safety interventions[22] and (2) the impact of police- versus community-led safety models on physical activity and park use in a

historically underserved community of color. Future research should explore the longitudinal effects of community-led safety strategies like SPS on broader indicators of community health, trust, resilience, and perceived safety.

There are several strengths and limitations worth noting. First, our community-based participatory research (CBPR) approach ensured that the study design reflected the lived realities and interests of South LA residents.[26,41] Second, by using validated tools (i.e., SOPARC and PARA) to examine park conditions and MVPA across a large sample of parks and observations, we were able to assess nuanced patterns in MVPA by race, sex, and age while accounting for differences in environmental conditions.[1,2,18,44,46] Third, we developed a hierarchical model to account for the data's nested structure and to better understand how park-level conditions influence MVPA.[1]

Regarding limitations, to begin, while our study design controlled for several key covariates, unmeasured variables such as perceived safety and neighborhood social cohesion, as well as weather patterns, may also affect public park utilization and physical activity.[1,17] Next, we collected all data during the summer season, limiting the generalizability of our findings beyond the study period. This study focused exclusively on parks in South LA, which may limit generalizability to other urban contexts with nuanced histories of racialized violence and policing. That said, we contend that South LA's structural and racialized conditions are emblematic of many urban communities across the U.S., making the implications of this research broadly relevant. Finally, we were unable to draw causal inferences because of our reliance on cross-sectional data.

Conclusions

Community-led Safe Passage programs offer a promising approach to advancing health equity by increasing public park use and physical activity, particularly among youth and Black residents in

underserved communities, by fostering safety through community engagement. Our findings suggest that policymakers, park administrators, and public health departments should consider community-led Safe Passage models as a promising approach for promoting park-based physical activity and health equity. Building on the expertise of community-based organizations and resident knowledge of place, these community-led interventions may be scaled cost-effectively while simultaneously addressing multiple social determinants of health, such as public safety and access to physical activity opportunities, while advancing community empowerment.

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Table 1. Park User Characteristics by Park Type and Mean Physical Activity Intensity.

Park User Characteristics	Total	CSP	SPS	MVPA
	N = 3997	*n* = 2255	*n* = 1742	1.09
Race/Ethnicity				
Black	1648 (41.2)	720 (31.9)	928 (53.3)	1.08
Non-Black	2349 (58.8)	1535 (68.1)	814 (46.7)	1.09
Sex				
Male	2583 (64.6)	1437 (63.7)	1146 (65.8)	1.19
Female	1414 (35.4)	818 (36.3)	596 (34.2)	0.91
Age Group				
Child	1343 (33.6)	859 (38.1)	484 (27.8)	1.64
Teen	583 (14.6)	184 (8.2)	399 (22.9)	1.39
Adult	1959 (49.0)	1157 (51.3)	802 (46.0)	0.65
Senior	112 (2.8)	55 (2.4)	57 (3.3)	0.45

Table 2. Mean Park Size and Quality of Park Characteristics by Park Type

Park Characteristics	CSP	SPS	MD	95% CI	*p*
Park Size (acres)	10.40 (4.98)	9.92 (5.38)	0.47	(-5.88, 4.93)	0.85
Features	23.56 (6.19)	25.38 (2.50)	-1.82	(-3.13, 6.77)	0.44
Amenities	26.67 (5.63)	27.62 (2.92)	-0.96	(-3.70, 5.62)	0.66
Incivilities	11.00 (8.62)	9.12 (4.39)	1.88	(-8.98, 5.23)	0.58

Table 3. Mean Physical Activity Intensity by Race/Ethnicity, Sex, and Age Across Park Types

Group	CSP	SPS	MD	95% CI	*p*
Overall	1.05 (0.88)	1.14 (0.84)	0.098	[0.044, 0.152]	<.001***
Race/Ethnicity:					
Black	0.98 (0.88)	1.17 (0.88)	0.191	[0.105, 0.277]	<.001***
Non-Black	1.08 (0.88)	1.12 (0.79)	0.039	[-0.031, 0.109]	0.274
Sex:					
Male	1.13 (0.88)	1.25 (0.84)	0.122	[0.056, 0.189]	<.001***
Female	0.90 (0.87)	0.93 (0.80)	0.037	[-0.051, 0.124]	0.41
Age Group:					
Child	1.68 (0.67)	1.58 (0.69)	-0.095	[-0.171, -0.018]	0.015*
Teen	1.07 (0.83)	1.54 (0.76)	0.473	[0.331, 0.615]	<.001***
Adult	0.61 (0.74)	0.73 (0.73)	0.12	[0.054, 0.186]	<.001***
Senior	0.38 (0.56)	0.51 (0.63)	0.127	[-0.096, 0.350]	0.262

Note: Values represent mean (SD) physical activity intensity scores derived from the System for Observing Play and Recreation in Communities (sedentary = 0, moderate = 1, vigorous = 2). Mean difference (MD) was calculated as Safe Passage Services (SPS) – Community Safety Partnership (CSP).

Table 4. Predictors of Physical Activity Intensity

Predictor	β SE	95% CI	*p*
Intervention:			
SPS Park: Black Users (n=1648)	0.190 (0.090)*	[0.014, 0.366]	0.034
SPS Park: Non-Black Users (n=2349)	0.155 (0.089)	[-0.019, 0.329]	0.081
SPS x Race Interaction	0.035 (0.050)	[-0.062, 0.132]	0.482
Race (CSP Parks):			
Black vs Non-Black users	-0.067 (0.034)*	[-0.134, -0.000]	0.05
Individual Covariates:			
Female	-0.250 (0.023)***	[-0.296, -0.204]	<.001
Age: Child (vs Adult)	0.978 (0.025)***	[0.929, 1.028]	<.001
Age: Teen (vs Adult)	0.623 (0.036)***	[0.553, 0.692]	<.001
Age: Senior (vs Adult)	-0.187 (0.069)**	[-0.322, -0.053]	0.006
Park Characteristics:			
Features	-0.012 (0.014)	[-0.039, 0.015]	0.374
Amenities	0.011 (0.017)	[-0.023, 0.044]	0.531
Incivilities	-0.027 (0.007)***	[-0.040, -0.014]	<.001
Random Effects:			
Park-level variance	0.027		
Residual variance	0.488		
Model Fit:			
AIC	8590		
Marginal R^2	0.332		
Conditional R^2	0.368		

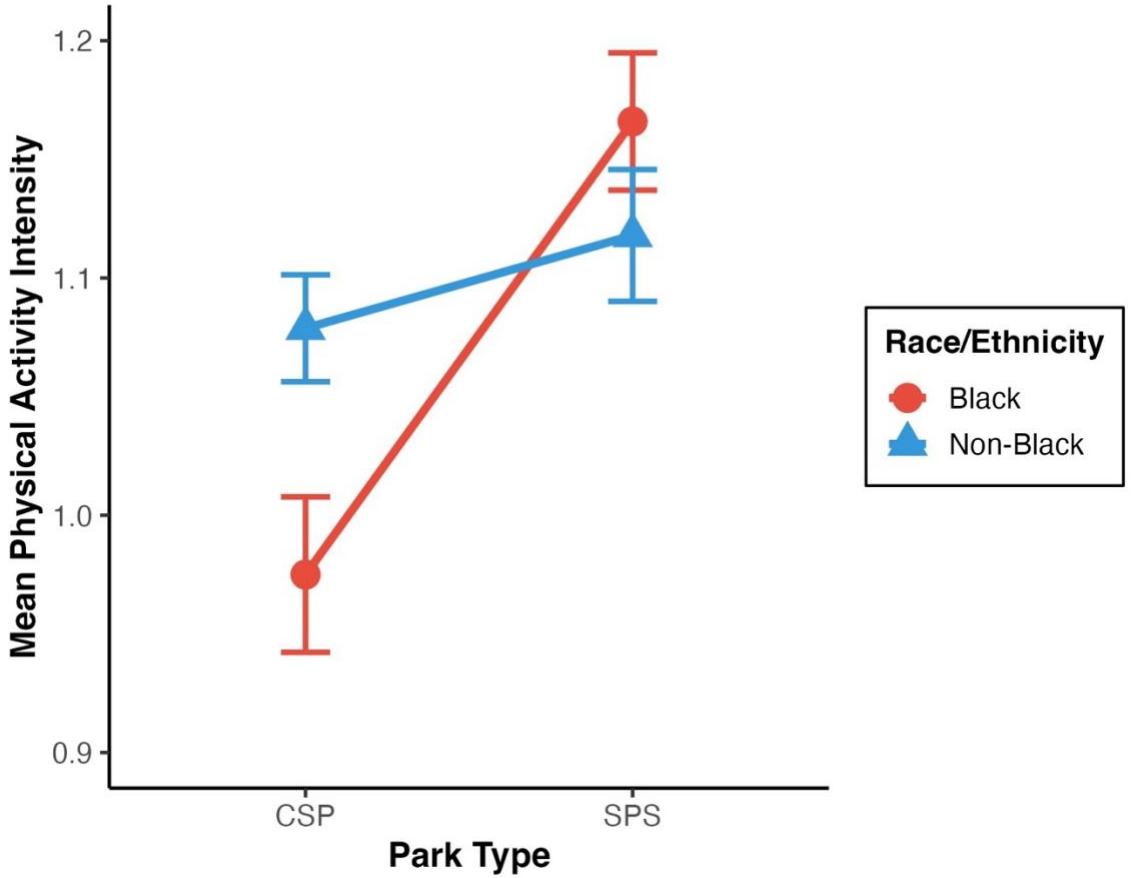

Figure 1: Mean Physical Activity Intensity by Race/Ethnicity and Park Type.