

The Effect of Sport Facilities and Trail Systems on the Use of Green Spaces for Physical Activity among Latino(a) Americans

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Physical activity participation among Latino(a)s

- Physical inactivity is more prevalent among ethnic/racial minorities than Caucasians (Troost et al., 1997).
- Physical inactivity is much more widespread among Latina women than Latino men. In the NHANES III survey, 65% of Latino men and 74% of Latina women reported no participation in LTPA (Crespo, Keteyian, Heath, & Sempos, 1996).
- Low levels of LTPA among minorities are often attributed to lack of exposure to physical activity, lack of role models, lack of time and money, safety issues, lack of facilities, perceived ability, social discomforts, and physically demanding occupations (Arriaza Jones et al., 1998; Evenson et al., 2002; Eyler et al., 1998; Henderson & Ainsworth, 1999; Wilcox et al., 2000; Young et al., 1998).
- The most frequently reported LTPA among ethnic minority members, including Latino(a)s, is walking (Ainsworth et al., 1999; Bild et al., 1993; Clark, 1999).

Purpose of the study

- Employed an **ecological model** (Ball, Bauman, Leslie, & Neville, 2001; Sallis & Owen, 1997) to examine the impact of sport facilities and trail systems on the utilization of urban natural environments for active recreation by Latino(a) Americans.
- **Goal** was to determine what types of amenities should be located within green spaces in order to maximize their use for physical activity among the Latino(a) population.
- **Three different environments examined:**
 - 2 community parks in Elgin, IL (pop. 94,487; 34% Latino)
 - Stuart Sports Complex in Aurora, IL (pop. 142,990; 33% Latino)
 - Montrose section of Lincoln Park in Chicago, IL (pop. 2,896,016; 26% Latino)

Research hypotheses

- **Hypothesis 1:** Latino males are more physically active in natural environments with sport facilities than they are in natural environments with trail systems.
- **Hypothesis 2:** Latina females are more physically active in natural environments with trail systems than they are in natural environments with sport facilities.

Settings

■ Elgin Parks

- **Wing Park** - 121-acres; features ball fields, soccer fields, basketball courts, a golf course, and an ice skating rink used in winter. It also has a playground, a shelter/gazebo, swimming pools and tennis courts.
- **Lords Park** - 108-acres; features several lagoons, ball fields, basketball courts, a museum, pavilion, shelter/gazebo, playgrounds, swimming pools, and a zoo.

■ Stuart Sports Complex

- Open-field type of facility; features 21 soccer fields, baseball and basketball courts, a playground, and a centrally located pavilion. Utilized during the summer months only, primarily on weekends by soccer and baseball league players and their families.

■ Lincoln Park (Montrose section – Chicago)

- 1,208 acres; features a zoo, a half-dozen beaches, a botanical conservatory, two museums, a golf course, tennis courts, lagoons, ponds, meadows, gardens, sporting fields, and tennis courts.

Study design

- **Field observations**
- **Existing park district data**
- **On-site surveys of Latino(a) users**
 - June - August, 2005
 - 307 properly completed surveys collected in the Elgin parks, 309 in the Stuart Sports Complex, and 301 along the Lincoln Park trails.
 - both English and Spanish versions of the survey used
 - In Elgin – surveys distributed throughout the week, from morning to sunrise. At the sports complex – from 9AM to 4PM on Sundays only, at the Lincoln Park – throughout the week, but mostly during the weekends.

Survey instrument

■ Survey included:

- park / trail / sports complex visitation patterns and facility use
 - Trail use measure (Spruijt-Metz, Reynolds, Lindsey, Troped, Wolch, Byrne, Myles, Hsieh, Xie, Gatto, & Sallis, 2005)
 - distance park / trail / sports complex was from their home
 - general physical activity participation (IPAQ, 2002)
 - constraints and attitudes toward physical activity
 - individual characteristics of the respondents
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- 3 pairs of interviewers – college students of Latino descent hired to collect data
 - Attempt made to contact all Latinos present in the park on a given day
 - Very high response rate (>90%) at all 3 locations

Findings - Survey

Sample characteristics

	Elgin Parks	Sports Complex	LP Trails
Age	32	28	32
Gender (% females)	53.7	37.2	46.4
Marital status (% married)	61.7	45.7	51.7
Average household income (\$)	26,787	21,827	33,886
Low educational background* (%)	54.6	59.1	48.9
Immigrants (%)	88	78.4	77.9
Average length of residence (years)	9	7.6	12

* some high school or some vocational school less

Findings – Survey

Park / SC / trails visitation patterns

	Elgin Parks	Sports Complex	LP Trails
Frequency of visitation per month	5	3	4
Average length of visit (min.)	140	128	280
Mode of transportation (% came by car)	85	97.4	85.7
Length of travel (minutes by car)	14	26	30

Table 1
Logistic Regression Analysis of Socio-Economic Characteristics on Rec. Participation for the Entire Sample

	Sitting / Resting/ Relaxing	BBQing / Picnicking	Playing with children	Talking / Socializing	Bicycling	Walking	Jogging / Running	Soccer
GENDER	0.89*** (0.21)	0.09 (0.17)	0.83*** (0.21)	0.70*** (0.18)	-0.32* (0.17)	0.13 (0.18)	-0.44*** (0.15)	-1.50*** (0.19)
MARITAL STATUS	-0.13 (0.22)	-0.24 (0.19)	-0.02 (0.23)	0.31 (0.19)	-0.73*** (0.19)	-0.23 (0.20)	-0.35** (0.17)	-0.06 (0.21)
AGE	0.01 (0.06)	-0.02 (0.05)	0.07 (0.06)	0.04 (0.05)	-0.05 (0.05)	-0.08 (0.07)	-0.08* (0.05)	0.11* (0.06)
AGE2	0.01 (0.01)	0.01 (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.00)	0.01 (0.01)	-0.01** (0.01)
EDUCATION	0.11 (0.19)	0.57** (0.17)	0.19 (0.20)	-0.01 (0.17)	0.43*** (0.17)	0.35** (0.17)	0.18 (0.15)	-0.08 (0.18)
SPORTS COMPLEX	-1.69*** (0.26)	-2.76*** (0.23)	-1.59*** (0.21)	-1.68*** (0.22)	-1.55*** (0.22)	-1.70*** (0.22)	-0.80*** (0.19)	3.78*** (0.37)
ELGIN	-0.24 (0.29)	-1.27*** (0.22)	--	-0.35 (0.24)	-0.78*** (0.20)	0.08 (0.24)	-0.18 (0.18)	3.46*** (0.37)
Constant	1.71 (1.07)	2.06** (0.89)	-0.26 (1.04)	0.24 (0.89)	1.18 (0.89)	2.55** (1.08)	2.02*** (0.79)	-4.16*** (1.10)
N	805	798	553	792	786	801	793	805
-2 Log of Likelihood	701.44	882.11	607.74	833.89	852.31	827.12	1054.32	741.95
Pseudo R2	.19	.31	.24	.22	.15	.21	.07	.45

* Coefficient significant at p<.10; ** Coefficient significant at p<.05; *** Coefficient significant at p<.01; Values in parentheses represent standard errors.

Table 2
Logistic Regression Analysis of Socio-Economic Characteristics on Rec. Participation for the MEN only

	Sitting / Resting/ Relaxing	BBQing / Picnicking	Playing with children	Talking / Socializing	Bicycling	Walking	Jogging / Running	Soccer
MARITAL STATUS	-0.61** (0.28)	-0.29 (0.27)	-0.18 (0.30)	-0.03 (0.25)	-0.99*** (0.27)	-0.61** (0.27)	-0.59** (0.23)	0.20 (0.29)
AGE	0.09 (0.07)	-0.01 (0.07)	0.13* (0.08)	0.11* (0.07)	0.05 (0.07)	-0.01 (0.09)	-0.05 (0.06)	0.20** (0.10)
AGE2	-0.01 (0.01)	-0.01 (0.01)	-0.01* (0.01)	-0.01 (0.01)	-0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	-0.01** (0.01)
EDUCATION	0.23 (0.24)	0.65*** (0.22)	0.40 (0.27)	-0.19 (0.22)	0.67*** (0.23)	0.29 (0.23)	0.14 (0.20)	-0.26 (0.25)
SPORTS COMPLEX	-2.11*** (0.34)	-2.72*** (0.31)	-2.02*** (0.29)	-1.88*** (0.28)	-1.72*** (0.29)	-1.59*** (0.28)	-0.82*** (0.25)	3.96*** (0.43)
ELGIN	-0.41 (0.38)	-1.05*** (0.30)	--	-0.37 (0.31)	-0.59** (0.27)	0.23 (0.34)	0.17 (0.26)	3.41*** (0.43)
Constant	0.62 (1.27)	1.58 (1.18)	-0.91 (1.34)	-0.53 (1.12)	-0.58 (1.22)	1.19 (1.40)	1.66 (1.05)	-5.48*** (1.63)
N	440	434	305	432	428	434	434	442
-2 Log of Likelihood	434.78	477.47	349.34	495.54	464.54	465.53	573.79	407.10
Pseudo R2	.23	.33	.27	.22	.19	.23	.08	.50

* Coefficient significant at p<.10; ** Coefficient significant at p<.05; *** Coefficient significant at p<.01; Values in parentheses represent standard errors.

Table 3
Logistic Regression Analysis of Socio-Economic Characteristics on Rec. Participation for the WOMEN only

	Sitting / Resting/ Relaxing	BBQing / Picnicking	Playing with children	Talking / Socializing	Bicycling	Walking	Jogging / Running	Soccer
MARITAL STATUS	0.58 (0.38)	-0.24 (0.29)	0.06 (0.38)	0.93*** (0.32)	-0.62** (0.28)	0.27 (0.31)	-0.06 (0.26)	-0.17 (0.32)
AGE	-0.19 (0.13)	-0.05 (0.08)	-0.07 (0.12)	-0.16 (0.12)	-0.16* (0.08)	-0.19* (0.11)	-0.13* (0.07)	-0.02 (0.09)
AGE2	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01 (0.01)	0.01* (0.01)	0.01 (0.01)	0.01 (0.01)
EDUCATION	-0.02 (0.34)	0.51** (0.25)	-0.03 (0.32)	0.42 (0.29)	0.14 (0.26)	0.52* (0.27)	0.32 (0.22)	0.14 (0.28)
SPORTS COMPLEX	-1.05*** (0.42)	-2.79*** (0.36)	-1.09*** (0.32)	-1.51*** (0.36)	-1.24*** (0.34)	-1.96*** (0.34)	-0.78*** (0.29)	3.44*** (0.74)
ELGIN	-0.11 (0.44)	-1.47*** (0.32)	--	-0.32 (0.37)	-0.96* (0.29)	-0.11 (0.35)	-0.53** (0.26)	3.30*** (0.73)
Constant	5.01** (2.16)	2.76** (1.36)	2.52 (1.98)	3.31 (1.86)	2.92** (1.38)	4.29** (1.70)	2.17* (1.21)	-3.77** (1.60)
N	365	364	248	360	358	367	359	363
-2 Log of Likelihood	252.23	402.85	249.34	326.51	375.72	354.73	471.78	323.61
Pseudo R2	.07	.28	.09	.15	.14	.21	.05	.23

* Coefficient significant at p<.10; ** Coefficient significant at p<.05; *** Coefficient significant at p<.01; Values in parentheses represent standard errors.

Discussion/Conclusions

- Men were significantly more likely to be involved in physical activities (except for walking where no gender differences were found), whereas women were significantly more likely to be involved in passive activities (except for BBQing where no gender differences were found)– regardless of environment.
- The **most popular physical activities** among men were: walking (69.2%), jogging (51.2%), soccer (46.9%). The most popular physical activities among women were: walking (74.7%), jogging (41.2%), bicycling (26.3%).
- Both men and women were more likely to participate in walking, jogging, and biking at the trails than in the sports complex and they were more likely to bike at the trails than in the parks. Women were more likely to jog at the trails than in the parks.

Discussion/Conclusions

- **Sports complexes** are good for promoting specific activities, such as soccer, regardless of gender, but between-gender comparisons indicate that men are significantly more likely to be involved in soccer (72.8%) than women (33.6%).

Thus, sports complexes are effective in promoting PA in some activities, particularly among men, whereas **trails and parks** promote walking – equally popular among both men and women.

Trails and parks are also effective in promoting biking and jogging, although men's participation in these activities is slightly higher than women's.

Future issues

- Need for accelerometer data to determine exactly HOW active people are at each site.
- Additional variables will be added to the models to determine their impact on physical activity at each of the three sites (safety issues, distance site is from place of residence, general physical activity levels –IPAQ).
- Need to triangulate survey findings with observational data.