

YOUTH ACTIVITY SPACES, EXPOSURE TO TOBACCO OUTLETS, AND PERCEPTIONS OF EXPOSURE TO TOBACCO RETAIL MARKETING

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OBJECTIVE

- We investigated youth daily activity spaces, exposure to tobacco outlets, and perceptions of exposure to tobacco retail marketing.

METHODS

PARTICIPANTS

- 98 youth in 8 California cities
- 16–20 year old (Mean=18.5)
- 41% male; 29% Hispanic; 50% White

PROCEDURES

- Youth carried GPS-enabled smartphones with a survey application for 14 days.
- They responded to brief daily surveys and GPS location coordinates were obtained at one-minute intervals.
- Addresses of all tobacco outlets in study cities were documented through field observations.

MEASURES

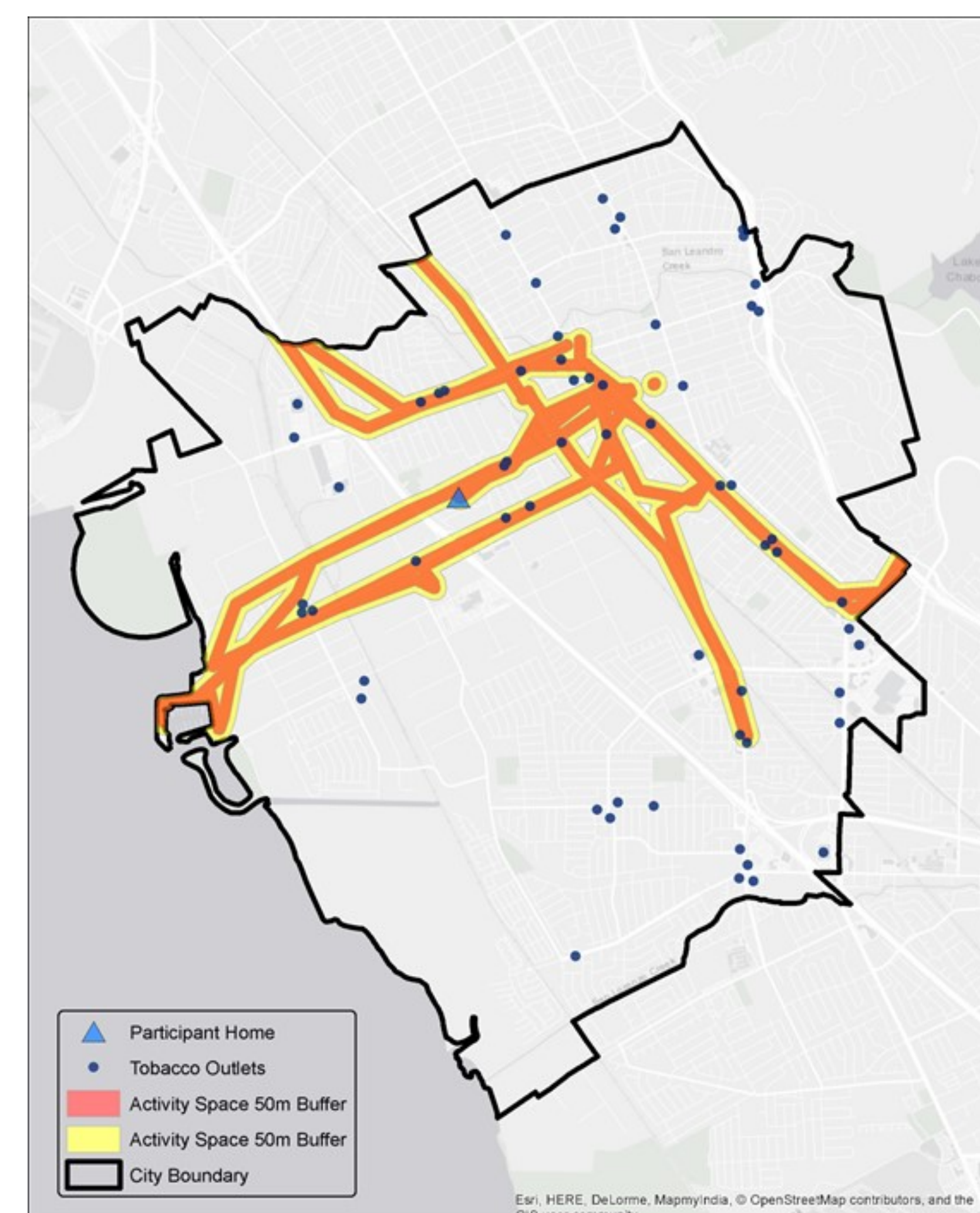
Initial Survey:

- Demographic characteristics

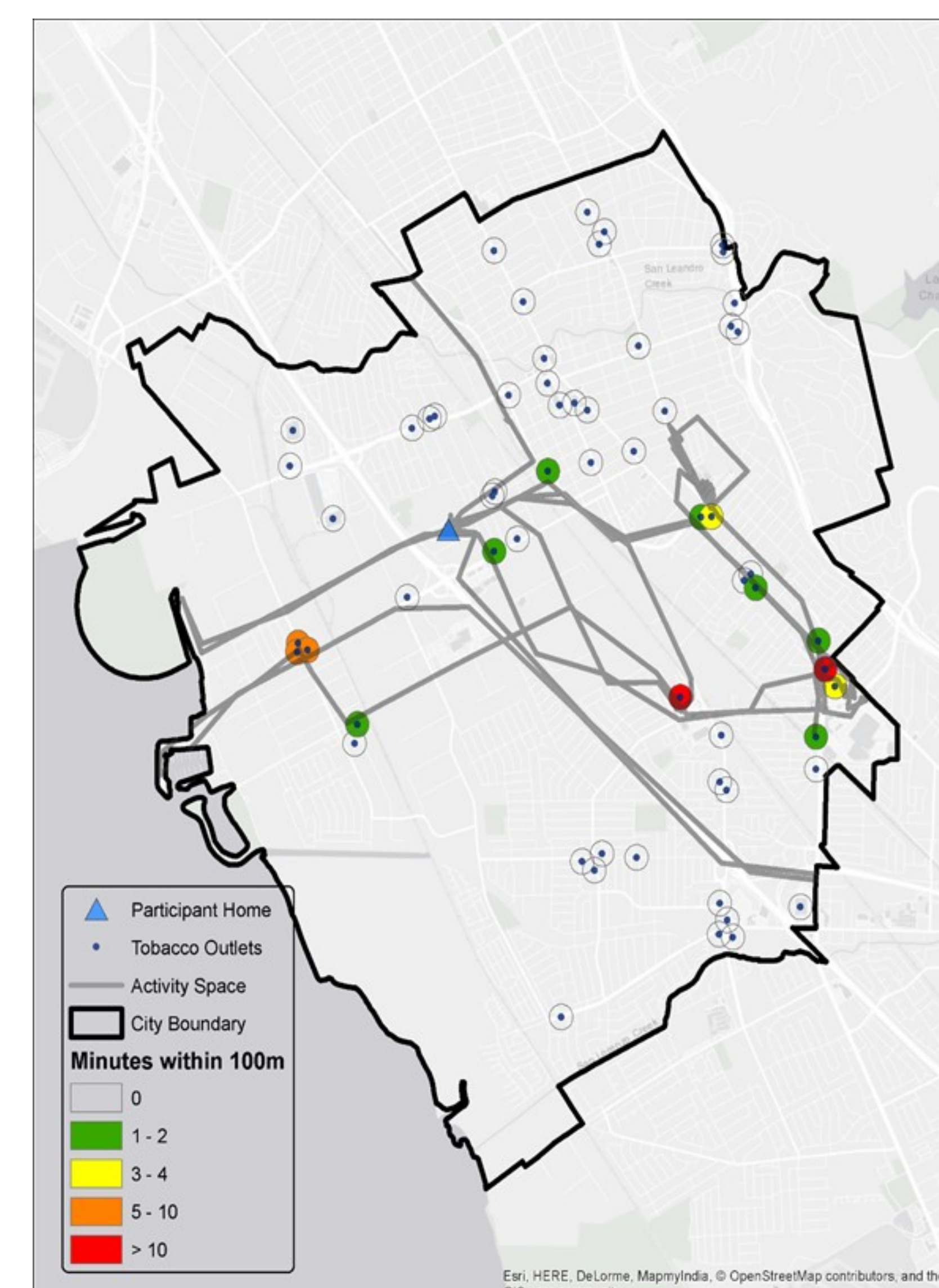
Daily Surveys:

- Perceived exposure to point-of-sale (POS) tobacco marketing around:
 - Neighborhood
 - School
 - Workplace
 - Other places
- Time traveled by walking each day (4-point scale from none to more than 1 hour)
- Exposure to Tobacco Outlets:
 - Number of tobacco outlets within 50m or 100m of activity space polylines
 - Amount of time participants were within 50m or 100m of tobacco outlets each day

ACTIVITY SPACES AND EXPOSURE MEASURES



- Tobacco outlet addresses and GPS location coordinates were geocoded.
- Activity spaces were constructed by joining sequential location points.



- Number of minutes within 100m of tobacco outlets from 0 to >10.

RESULTS AND CONCLUSIONS

STUDY EXPOSURE MEASURES

Variable	Percent	Mean (SD)	Range
Number of km participants traveled each day		19.97 (23.59)	0.01-140.69
Proportion of time walked within their activity spaces each day		0.31 (0.25)	0.00-1.00
Daily exposure to tobacco outlets within activity space			
Number of outlets within 100m of polylines		4.75 (4.99)	0.00-27.07
Number of outlets within 50m of polylines		3.15 (3.63)	0.00-20.98
Minutes around outlets within 100m of polylines		19.01 (47.37)	0.00-573.00
Minutes around outlets within 50m of polylines		8.23 (20.25)	0.00-399.33
Daily exposure to point-of-sale marketing			
Store around own neighborhood	16.89		
Store around school	11.71		
Stores around workplace	9.12		
Anywhere else	24.15		

- On average, young people are exposed to about 5 tobacco outlets each day in their activity spaces.
- They spend 19 minutes within 100m of tobacco outlets each day.

RESULTS OF MULTILEVEL ZERO-INFLATED NEGATIVE BINOMIAL REGRESSION MODEL TO ASSESS ASSOCIATIONS BETWEEN ACTIVITY SPACE SIZE AND EXPOSURE TO TOBACCO OUTLETS WITHIN ACTIVITY SPACES, IRR (95% CIS)

	Number of outlets within 100m of activity space	Number of outlets within 50m of activity space	Minutes around outlets within 100m of activity space	Minutes around outlets within 50m of activity space
Activity Space Size	1.01 (1.01, 1.02)**	1.03 (1.02, 1.04)**	1.02 (1.01, 1.03)**	1.03 (1.02, 1.04)**
Age	1.01 (0.95, 1.07)	1.01 (0.92, 1.10)	1.04 (0.89, 1.20)	1.05 (0.92, 1.19)
Male	1.21 (1.01, 1.46)*	1.32 (1.00, 1.74)*	1.82 (1.06, 3.11)*	1.76 (1.14, 2.73)*
White	0.88 (0.73, 1.05)	0.92 (0.71, 1.20)	1.35 (0.77, 2.36)	1.04 (0.67, 1.61)
Hispanic	0.84 (0.66, 1.06)	0.75 (0.55, 0.99)*	0.58 (0.37, 0.92)*	0.51 (0.35, 0.75)**
Subjective SES	0.95 (0.89, 1.00)	0.90 (0.82, 0.98)*	0.88 (0.77, 1.02)	0.88 (0.76, 1.01)

* $p \leq 0.05$; ** $p \leq 0.001$

- Larger activity spaces were associated with greater exposure to number of outlets within 50m and 100m of participants' polylines and with increased time spent within 50m or 100m of tobacco outlets each day.

RESULTS OF MULTILEVEL MIXED EFFECTS LOGISTIC REGRESSION MODELS TO ASSESS ASSOCIATIONS BETWEEN ACTIVITY SPACE SIZE AND DAILY EXPOSURE TO TOBACCO MARKETING AT THE POINT-OF-SALE (POS), OR (95% CIS)

	POS exposure around neighborhood	POS exposure around school	POS exposure around workplace	POS exposure around other places
Activity Space Size	1.01 (1.00, 1.02)*	1.01 (0.99, 1.02)	0.99 (0.97, 1.01)	1.01 (1.00, 1.02)*
Age	0.63 (0.42, 0.93)*	0.65 (0.41, 1.03)	1.43 (0.85, 2.40)	0.77 (0.53, 1.11)
Male	1.53 (0.47, 4.95)	0.84 (0.22, 3.27)	3.26 (0.67, 15.84)	0.97 (0.32, 2.96)
White	1.29 (0.42, 4.05)	0.68 (0.18, 2.57)	1.40 (0.32, 6.12)	0.73 (0.25, 2.17)
Hispanic	2.96 (0.88, 9.95)	3.51 (0.89, 13.79)	2.23 (0.45, 10.74)	3.36 (1.04, 10.89)*
Subjective SES	0.67 (0.44, 1.02)	0.67 (0.40, 1.11)	0.69 (0.41, 1.18)	0.82 (0.55, 1.22)

* $p \leq 0.05$

- Perceived tobacco retail marketing at the POS in the general activity space was greater among youth who walked more (OR=1.05, $p < 0.05$).
- In conclusion, results suggest that larger activity spaces may create greater cumulative exposure to tobacco outlets and increase perceived exposure to tobacco retail marketing at the POS, especially for youth who travel by walking.

CONFLICT OF INTEREST: None.

ACKNOWLEDGEMENT:

- This research and preparation of this poster were supported by grant 25IR-0029 from the California Tobacco-Related Disease Research Program (TRDRP), grant P60-AA-006282 from the National Institute on Alcohol Abuse and Alcoholism (NIAAA) of the National Institutes of Health (NIH), grant R03-DA041899 from the National Institute on Drug Abuse (NIDA) of the NIH, and grant R01-CA190238 from the National Cancer Institute (NCI) of the NIH. The content is solely the responsibility of the authors and does not necessarily represent the official views of TRDRP, NIAAA, NIDA, NCI, or NIH.

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