

YOUTH DAILY EXPOSURE TO TOBACCO OUTLETS WITHIN THEIR ACTIVITY SPACES AND CIGARETTE SMOKING BEHAVIORS

Sharon Lipperman-Kreda¹, Joel W. Grube¹, Laura J. Finan², Emily Kaner¹, Anna Balassone,¹ Andrew Gaidus¹, Melissa Abadi³, Zena Mello⁴

¹Prevention Research Center, Pacific Institute for Research and Evaluation, Berkeley CA

²Illinois State University, Department of Psychology, Normal IL

³Pacific Institute for Research and Evaluation, Louisville KY

⁴San Francisco State University, Department of Psychology, San Francisco CA

OBJECTIVE

- We compared youth exposure to tobacco outlets within their activity spaces to their exposure to tobacco outlets around homes and investigated associations with daily cigarette smoking and number of cigarettes smoked.

METHODS

PARTICIPANTS

- 99 youth (ages 16-20) in 8 mid-sized California cities
- 41% Male
- 31% Hispanic; 50% White

PROCEDURES

- Observations of all tobacco outlets to document addresses and obtain GPS location coordinates.
- Youth carried GPS-enabled smartphones with a survey application for 14 days.
- After an initial survey, youth responded to brief daily surveys and GPS location coordinates were obtained at one-minute intervals.
- Activity spaces were constructed by joining sequential location points.

MEASURES

Initial Survey

- Demographic characteristics

Daily Surveys

- Any daily cigarette smoking
- Number of cigarettes smoked

Exposure to tobacco outlets

- Number of tobacco outlets within 100m of activity space polylines
- Number of tobacco outlets within 400m of home

DATA ANALYSIS

- We considered 1,087 assessments from 99 participants.
- We used multilevel mixed effects and zero-inflated negative binomial regression models to control for clustering of observations within participants over time.

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.

EMAIL: skreda@prev.org

To obtain a copy of this poster, please visit: <https://www.prev.org>

RESULTS

DOES EXPOSURE TO TOBACCO OUTLETS DIFFER BETWEEN HOME AND ACTIVITY SPACES?

Variable	Mean (SD)	Range
Number of outlets within 400m of home ¹	0.41 (0.77)	0.00-3.00
Number of outlets within 100m of activity space polylines	4.31 (4.94)	0.00-27.07

¹ No participant had a tobacco outlets within 100m of his or her home.

- On average, there were 4.31 tobacco outlets within 100m of participants' activity spaces, compared with 0.41 outlets within 400m of their homes.

IS DAILY EXPOSURE TO TOBACCO OUTLETS AROUND HOMES AND WITHIN ACTIVITY SPACES ASSOCIATED WITH ANY CIGARETTE SMOKING BY YOUTH THAT DAY?

- Prevalence of any daily cigarette use was 9.75% .

Results of a multilevel mixed effects logistic regression model predicting any cigarette smoking	Any cigarette smoking
	OR (95% CI)
Number of outlets within 400m of homes	9.27 (1.83, 46.77)*
Number of outlets within 100m of activity space polylines	1.05 (0.96, 1.14)
Age	2.26 (0.93, 5.52)
Male	0.92 (0.11, 7.82)
White	1.61 (0.17, 15.05)
Hispanic	8.41 (0.71, 99.07)
Subjective SES	0.61 (0.26, 1.43)

* p ≤ 0.05; ** p ≤ 0.001

- Controlling for demographics, greater numbers of tobacco outlets within 400m of homes was associated with increased likelihood of daily cigarette smoking.
- Number of tobacco outlets within 100m of youths' activity space polylines was not associated with any daily cigarette smoking.

IS DAILY EXPOSURE TO TOBACCO OUTLETS AROUND HOMES AND WITHIN ACTIVITY SPACES ASSOCIATED WITH THE NUMBER OF CIGARETTES SMOKED THAT DAY?

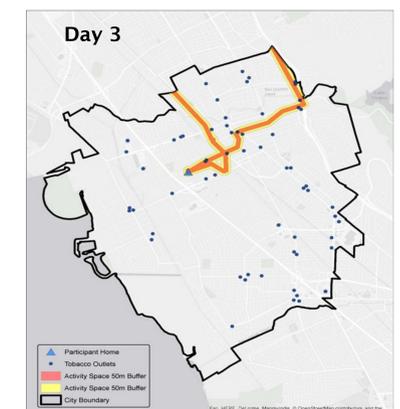
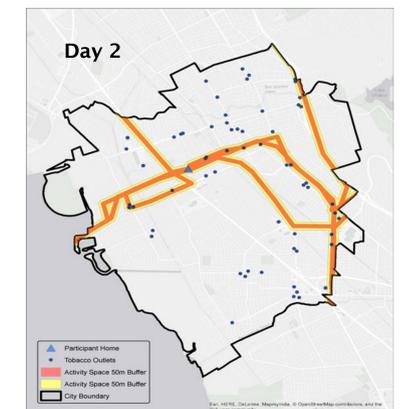
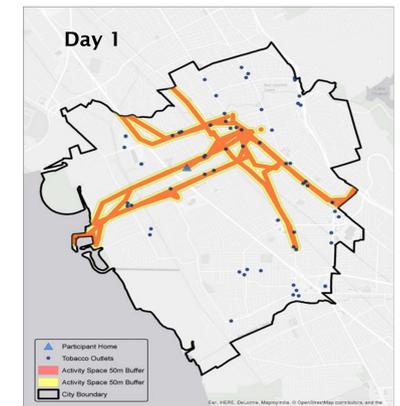
- On average, participants reported smoking 0.39 (SD=1.52) cigarettes per day (Range 0-18).

Results of a zero-inflated negative binomial regression model	Number of cigarettes smoked
	IRR (95% CI)
Number of outlets within 400m of homes	3.17 (1.55, 6.46)*
Number of outlets within 100m of activity space polylines	1.04 (1.01, 1.08)*
Age	2.32 (1.44, 3.73)**
Male	2.63 (1.10, 6.27)*
White	3.12 (1.26, 7.73)*
Hispanic	4.84 (1.56, 14.98)*
Subjective SES	0.66 (0.50, 0.90)*

* p ≤ 0.05; ** p ≤ 0.001

- Daily exposures to tobacco outlets around homes and in activity spaces were associated with the number of cigarettes participants smoked per day.
- A likelihood ratio test showed that including an activity space exposure measure in the model significantly improved model fit (LR $\chi^2(1) = 5.99, p < .05$).

ACTIVITY SPACES OF ONE PARTICIPANT ACROSS THREE CONSECUTIVE DAYS



CONCLUSIONS

- Exposure measures considering only the home environment may underestimate youth exposure to tobacco outlets in their daily lives.
- Daily exposure to tobacco outlets within activity spaces did not uniquely matter for any daily cigarette smoking, but did matter for the number of cigarettes used per day.
- Daily exposure to tobacco outlets within activity spaces increased risk for heavier smoking by youth.
- Results may indicate different mechanisms by which these types of exposure matter (e.g., norms versus availability).